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Prof. Robert E. Rogers made some remarks on the fallacies that arose from the ordinary use of language, when applied to the description of phenomena in a scientific manner. He adverted to the subject of combustion to illustrate his views, and showed that our ordinary explanation of what is called by this name, where one of the substances is styled a *combustible*, and the other a *supporter of combustion*, as for example, in the burning of an ordinary gas light, was fallacious, because we only looked at it from one point of view. The gas to be burned was comparatively small in quantity, and the oxygen surrounding it was in large amount; hence the gas alone appeared to burn—the oxygen of the air to support it. When, however, we surround the oxygen with a large quantity of gas, or, so to speak, with an *atmosphere of gas*, thus reversing entirely the conditions, then the oxygen burns, and the gas becomes a supporter of combustion. We have then no right to call the gas a combustible any more than the oxygen; or the oxygen a supporter of combustion, any more than the gas. The action between the two bodies is mutual, and the various phenomena witnessed are the result of that mutual action. The Professor then exhibited a beautiful experiment, in which, after first burning the common illuminating gas in the ordinary way, he reversed the conditions, and burned a jet of *common air* in an *atmosphere of gas*.

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June 19th.

Mr. LEA, President, in the Chair.

Twenty-one members present.

The following papers were presented for publication:

"On the identity of *Ammonites Texanus*, Roemer, and *A. vesperinus Morton*," by Wm. M. Gabb.

"Descriptions of three new species of Gorgonidæ in the Collection of the Academy of Natural Sciences of Philadelphia," by George W. Horn.

And were referred to Committees.

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June 26th.

Mr. LEA, President, in the Chair.

Thirty-one members present.

The following papers were, on the report of the Committees to which they had been referred, ordered to be published in the Proceedings:

**On the Identity of *Ammonites Texanus*, Roemer, and *A. vesperinus*, Morton.**

BY W. M. GABB.

In 1834, Dr. Morton described an ammonite from Arkansas, in his synopsis, under the name of *A. vesperinus*. The type, consisting of two fragments of an individual, apparently about fifteen inches in diameter, is in the collection of the Academy.

As long ago as September of last year, I was struck with the resemblance of these specimens to the species described by Roemer, in "*Kreidebildungen von Texas*," 1852, under the name of *A. Texanus*. The originals of Dr. Morton's species were so weathered that I was unable to make out the septum.

More recently, however, through the kindness of Dr. Moore, I have been enabled to procure an undoubted specimen of *A. Texanus*, consisting of nearly the whole outer whorl of an individual, about a foot in diameter. On comparing this with Morton's specimens, I became convinced of their identity. The names will therefore have to be *A. vesperinus*, Morton; *A. Texanus*, Roemer, being a synonyme.

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## Contributions to American Lepidopterology.—No. 5.

BY BRACKENRIDGE CLEMENS, M. D.

## PYRALIDÆ.—CRAMBITES.

## CRAMBUS Fabricius.

*C. agitatellus*.—Head and thorax pale luteous; labial palpi somewhat fuscous, white beneath. Fore wings ochreous, tinted with orange, beneath the fold and toward the tip, with a broad silvery white median streak divided longitudinally by a chrome yellow line. The costa is dark fuscous from the base, and beyond the middle are two oblique fusco-luteous lines, the first of which is joined at an angle by another in the middle of the wing. On the middle of the apical third is a silvery white patch, another in the costa above it, a small one in the middle of hind margin, and one at the tip, margined internally by a small fuscous patch. Along the nervules, above and beneath the middle of the wing, are fuscous lines containing dull silvery scales, with a subterminal angulated silvery line, and a few marginal dots beneath the middle of the wing. Cilia silvery-hued. Hind wings whitish.

*C. laqueatellus*.—Head luteous. Thorax and labial palpi fuscous, the latter whitish beneath. Fore wings with two silvery white streaks, separated by a fuscous streak; the upper silvery streak is margined on the costa with fuscous, and the lower one, which extends beyond the apical third, is edged on the fold by the same hue. Beneath the fold, the wing is pale yellowish with a fuscous streak along submedian nervure. The apical portion of the wing is tinted with ochreous-yellow, in which the nervules are streaked with silvery; on the costa, near the tip, is an oblique silvery streak, dark margined on both sides. The subterminal silvery line is much angulated, and beneath the middle of the wing, is a large marginal whitish patch, containing black lines on the nervules. The tip of the wing is silvery, with an ochreous-yellow patch. Cilia silvery-hued. Hind wings pale fuscous, cilia white.

*C. involutellus*.—Labial palpi dark fuscous, whitish at the base beneath. Head and thorax dark yellowish with a brassy hue. Fore wings fusco-ochreous, with a brassy lustre, with a median silvery white streak pointed behind and extended nearly to the hind margin. The subterminal line is silvery, with a short white streak on each side of it on the costa. At the tip is a small white spot, and on the hinder margin beneath the middle is a whitish patch, containing marginal black dots. Cilia silvery-hued. Hind wings pale bluish white.

In some specimens the general hue of the fore wings is paler than the above.

*C. camurellus*. Labial palpi fuscous, whitish above. Head whitish. Fore wings rather pale, dull reddish fuscous or pale ochreous, dusted with fuscous, with an irregular patch of fuscous scales on the middle of the wing, where it is crossed by an angulated, rather ferruginous line, and one of the same hue near the hinder margin, edged externally by dull silvery. The nervules are faintly marked by silvery lines, and on the hind margin is a row of black dots. Cilia dark but silvery-hued. Hind wings grayish.

*C. luteolellus*.—Labial palpi pale yellowish, dusted externally with fuscous. Head, thorax and fore wings yellowish white, sometimes dusted with fuscous, with a patch of fuscous scales on the end of the disc, and an irregular line of the same hue near hinder margin. The hind margin marked by a slender dark brown line; cilia yellowish white. Hind wings fuscous, cilia whitish.

1860.]

*C. caliginosellus*.—Head, thorax and labial palpi dark fuscous. Fore wings dark fuscous, with two angulated umber brown lines, one about the middle of the wing, and rather indistinct, and one near the hind margin; on the hinder margin is a blackish brown line; cilia fuscous. Hind wings rather dark fuscous; cilia whitish.

*C. mutabilis*.—Grayish fuscous, varied beneath the fold with luteous. Labial palpi dark fuscous. Fore wings with a grayish median stripe, not extending beyond the disk, more or less tinted with luteous beneath the fold, and with fuscous along the base of the costa. On the end of the median nervure is a dark brown dot, and sometimes streaked with dark fuscous beneath the nervure. The subterminal line is faint and bluish, usually containing a row of faint brownish dots. Hind wings yellowish, gray or pale fuscous.

This species appears to be highly variable, the general hue being sometimes pale ochreous, and in specimens somewhat worn, scarcely to be identified.

*C. vulgivagellus*.—Labial palpi luteous, dark fuscous externally. Head and thorax luteous; tegulae with a fuscous stripe. Fore wings luteous, with numerous fuscous streaks in atoms, along the veins and two in the disk. Hind margin with a row of terminal black dots; cilia golden hued. Hind wings yellowish; cilia whitish.

*C. albellus*.—Pure white, with a row of black dots on the hind margin of the fore wings, with an oblique pale yellow acutely angulated line from near the middle of costa, and an angulated silvery subterminal line margined on both sides with pale yellowish. Above the marginal dots at the base of the cilia is a short blackish marginal line. Hind wings pale brownish-gray or whitish.

*C. elegans*.—Whitish. Fore wings at the base of costa rather broadly streaked with brown, having a brassy lustre, with a patch of brown scales on the inner margin near the base, and a short, curved streak of the same hue about its middle, which forms with its opposite when the wings are closed a semi-circular dorsal line, behind which the wing is dusted with brown. On the apical third of the wing is a broad, brown band, broadest on the costa, where it encloses a small white spot, and with a straight brown subterminal line exterior to it, on a silvery white ground. The hinder margin is dotted with black points; cilia silvery. Hind wings pale brownish white.

*Variety*. Costa slightly touched at the base with dark fuscous. No distinct broad band on the apical third, but the costa from nearly the middle, dark fuscous, containing two small, white costal spots. The subterminal line whitish, margined on each side with fuscous. The spot on middle of inner margin rather diffuse, not linear, and the wing behind it but little dusted. Hind wings whitish.

*C. Girardellus*.—Labial palpi pale fuscous externally, above and beneath silvery white. Fore wings silvery white, with an orange yellow stripe beneath the median nervure, somewhat turned upwards at its tip toward the apex of the wing, and extended on the sides of the thorax to the head; it is slightly margined toward the costa of the wing with dark reddish fuscous. The hind margin is dotted with blackish dots, and at the base of the cilia is a dark brown marginal line; cilia silvery. Head wings white.

Mass. From Dr. Chas. Girard.

*C. auratellus*.—Labial palpi and antennae orange yellow, the former silvery white above. Fore wings silvery white, with an orange yellow band, from the apical third of the costa to the middle of inner margin, where it is broadest, and somewhat produced along the costa toward the tip, and the inner margin to the anal angle. Cilia orange yellow, with a dark reddish fuscous, somewhat crenated basal line. Head wings white.

Mass. From Mr. S. H. Scudder, Jr.

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## CHILO Zincken.

*C. longirostrallus*.—Labial palpi, head and thorax ochreous white. Fore wings pale yellowish-white, with a fuscous line from the tip to the inner margin. Hind wings pale ochreous white. Abdomen tufted at the tip.

*C. melinellus*.—Ochreous yellow. Fore wings with a pale fuscous streak along the middle of the fold, extended nearly to the tip, and a faint oblique line of the same hue, from the tip, not extended to the hind margin. Hind wings pale yellowish-white. Abdomen tufted.

*C. aquilellus*.—Dark fuscous. Fore wings with an ochreous streak along the submedian nervure and its nervules, and those beneath likewise touched with the same hue. Hind wings yellowish fuscous.

## PHYCITES.

## NEPHOPTERYX Hübner.

*N. undulatella*.—Labial palpi, head and thorax grayish fuscous. Fore wings grayish fuscous, with an angulated white line crossing the disk, sometimes obsolete above the fold, margined with dark brownish, and a subterminal line of the same hue dark margined on both sides. At the end of the disk is a short blackish transverse line, slightly margined exteriorly with whitish. Hinder margin tipped with blackish; cilia grayish fuscous. Hind wings grayish testaceous; cilia paler.

Penna., Canada and Mass. From Dr. Chas. Girard, Washington, D. C.

Early in October, I found pupæ of this insect at Niagara Falls, on the Canada side, under shelter of loosened portions of the bark of the American Elm. They were enclosed in a cocoon of silk, mixed with particles of bark. On the same tree I took a number of larvæ which were descending the trunk to undergo pupation. I did not, however, obtain imagos from any of the specimens. The body was nearly uniform in diameter, with the ordinary number of feet. Head as broad as the body and dark green. Body dark green, between the segments yellowish and dotted with yellow; first rings with two black dots on the sides.

*N. ulmi-arrosorella*.—*Female*. Grayish-fuscous. Fore wings with a slender, dark fuscous angulated line, edged on the costa internally by a pale grayish spot, and on the inner margin externally by another of the same hue. The subterminal line pale gray, dark margined internally. Hind wings pale brownish, darker on the margin.

The larva is found on the American elm in August. The head is pale brown, dotted with dark brown. The body dark green, with a dorsal, double line of pale green patches, and a slight subdorsal and stigmal line of the same hue. On the 1st, 2d, 4th, 5th and 10th rings, are brown subdorsal points. It weaves a web on the surface of the leaves, feeding beneath it. The pupa is contained in a web between united leaves, in the vivarium. It becomes a pupa about the middle of August, and an imago about twelve or fourteen days after transformation.

## PEMPELIA? Hübner.

*Male*. Labial palpi moderately long, scarcely exceeding the vertex; first and second joints thick, third extremely short and slender. Maxillary palpi with a short pencil of hairs. Tongue nearly as long as the thorax beneath: scaled at base.

*P. virgatella*.—Brownish luteous. Fore wings varied with pale grayish toward the base and tip, with dull pale reddish at the base and middle of inner margin; on the middle of the costa is a blackish blotch, containing a short line of the same hue, and opposite, an angulated whitish line, with few black spots exterior to the costal line; a blotch of the same hue towards the 1860.]

base of submedian nervure, and a pale grayish subterminal line margined internally by a blackish line, and externally by black streaks on the nervules. The internal black margin is edged on the costa and middle of the wing with pale grayish. Hinder margin spotted with black; cilia grayish fuscous. Hind wings pale brownish.

P. ? *subcaesiella*.—*Male*. Pale bluish gray, dusted with fuscous. Fore wings with a reddish luteous band at the base, broadest on the inner margin, and a rather broad, dark fuscous band on the basal third. The subterminal line is pale grayish, edged behind by dark fuscous. Hind wings pale brownish.

#### EPHESTIA ——— ?

*E. ostrinella*.—Reddish-purple varied with blackish. Fore wings with the basal third and the apical portion reddish purple, with a broad blackish band in the middle edged internally by a straight whitish line, and an exterior costal patch of the same hue containing two blackish dots on a short streak. The subterminal line is pale grayish. Hind wings pale brownish gray.

The larvæ lives in the fruit heads of Sumack, passing the winter in the larval state. It is dark reddish-brown, head brown; cervical and terminal shields blackish brown. The body is supplied with a few isolated hairs, and one or two rows of obscure dark brown subdorsal dots.

The larvæ make galleries through the fruit heads, and desert them in the spring, to form their cocoons, which are slight silken webs, and appear as imagos about the middle of April.

*E. Zeae*.—*Tinea Zeae*, Fitch, Rept. 2d, 321. Fore wings with the basal third pale ochreous-yellow or yellowish-white, and the remainder fuscous, with a reddish-luteous spot on the end of the disk, or dark grayish-fuscous varied with reddish luteous.

The larvæ is a frequent inhabitant of houses, and feeds on a variety of dry goods, rye, corn, clover seed, on garlic heads, preserves, especially those contained in jars. The seeds are bound together with a silken web in which galleries are left. It would be well if Dr. Fitch changed the specific name of this insect as corn is by no means its favorite or usual food.

The labial palpi of the imago are more decidedly porrected than in the foregoing species, but I do not think the difference between them is generic. I have no males of *Zeae* in my collection and do not know whether they have the tuft beneath the fore wing.

#### LANTHAPHE.

*Male*. The discoidal cell of the fore wings is narrow and appears to be unclosed. The costal and subcostal nervures run very close to each other, if not united, in the basal third of the wing; the former, from union with the first subcosto-marginal branch much thickened, or indistinctly furcate. The subcostal subdivides into two branches near the basal third of the wing, the upper one subdividing again in the middle of the wing, sending a branch with a *long fork* to the costa near the tip and a simple branch to the apex. The lower branch is thickened towards its origin, simple, and is the post-apical nervule. The median is thickened towards its end, and is four-branched. Hind wings neuration pyraliform.

Head with ocelli. Eyes large and salient. Labial palpi ascending, applied closely to the front and with the tips much elevated above the vertex; first and second joints very short, first almost rudimental; the third very long, *folded longitudinally like a sheath*. Maxillary palpi rather short, with a pencil of very long, silky hairs, capable of being expanded, and *carried concealed in the sheath formed by the third joint of labial palpi*. Antennæ ciliated beneath; basal joint thick, with a short horn-like appendage behind having a tuft of hairs. Fore wings with a *small discal vitreous spot*, and the under surface from

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the base of the costa to the middle, *thickly covered with long scales placed transversely.*

*Female.* Fore wings without discal vitreous spot. Discoidal cell closed by an arcuate nervure; with costal and subcostal nervures distinct, the latter with a single marginal branch from the cell, and at the apical third of the wing subdividing into an apical and marginal branch, which is furcate; the subcosto post-apical from the superior angle of the cell. Submedian four branched.

With ocelli. Labial palpi ascending, with tips but little elevated above the vertex; nearly cylindrical; second joint somewhat thickened and long, extending above the eyes; the third short, slender and pointed. Maxillary short, without pencil of hairs. Antennæ simple and setaceous: basal joint thick, without appendage behind.

The tongue in both sexes is scaled at the base, and moderately long; and the fore wings with distinct strigæ and tufts of scales.

This genus appears to be congeneric with *Acrobasis* of Zeller.

*L. platanella.*—Labial palpi pale brownish-red, touched in front with pale gray. Head and thorax brownish-red, the latter varied with grayish and dark fuscous. Fore wings grayish fuscous, with the costa touched with brownish red, and a patch of the same hue in the female, near the base of the inner margin containing a tuft of raised scales; in the male, blackish brown, touched with brownish red. The base of the wing is whitish. In the middle of the wing is a broad white band, obsolete toward the costa, with two straight blackish-brown lines internally, and in the male shaded internally with the same hue. The subterminal line is irregular and whitish, dark margined internally. The hinder margin of the wing is touched with blackish-brown. Hind wings pale brown, somewhat darker toward the hinder margin.

The larvæ is tortriciform in appearance. Head pale brown, mottled with whitish. Body with isolated hairs, pale green, with a dark brown dorsal line and a fainter stigmatal line of the same hue, or pale reddish, with a brown dorsal line on each side of the vascular.

It makes a web on the under surface of the leaf of Sycamore, (*Platanus occidentalis*), drawing it together and living within a silken tube.

The cocoon is woven on the surface of the ground, in form of a flattened oval, consisting of brown silk covered exteriorly with grains of earth. The larvæ remain in it unchanged during the winter. It may be taken in July, and enters the pupa state during the latter part of August, to appear as an imago in May or June.

*L. asperatella.*—Labial palpi blackish brown, varied with whitish. Thorax pale grayish, varied with grayish or dark gray. Fore wings dark brownish-gray, with a blackish brown tuft of scales in the basal part of the fold, and a smaller one of the same hue on the disk above it, a whitish median band, sometimes almost obsolete, containing on the disk a small blackish-brown tuft in the female, with an internal crenated blackish line, and shaded toward the base with blackish; on its external margin is a line of raised scales. The subterminal line is pale grayish, angulated and margined internally by a blackish line, and externally by a fainter one produced into points on the nervules. The hinder marginal line is black. Sometimes in the female the base of the wing is whitish, slightly touched with luteous.

Penna. and Mass. From Dr. Chas. Girard.

#### TINEINA.

LITHOCOLLETIS. (See Paper No. 2.)

*L. Fitchella.*—*Argyromiges quercifoliella*, Fitch, Report v., Section 327. Head, face and thorax silvery white. Labial palpi tipped with pale ochreous. Antennæ pale saffron; basal joint silvery white. Fore wings pale 1860.]

reddish-saffron, with a slight brassy hue. Along the costa are *five silvery white costal streaks*, all black margined internally except the first, which is very oblique and continued along the costa to the base of the wing. All the costal streaks are short, except the first. On the inner margin are *two conspicuous silvery dorsal streaks*, dark margined internally, *the first, very large*, and placed near the middle of the inner margin, the second opposite the third costal streak. At the tip is a small, round black spot, placed above the middle of the wing; cilia silvery gray, tinted with saffron. Hind wings grayish-fuscous, cilia paler.

The specific name used by Dr. Fitch being already in use to designate a European species of this genus, it was necessary to change it. I feel pleasure, therefore, in dedicating it to the industrious observer who first described it, and who is adding so much to our knowledge of entomological Natural History.

*L. tubiferella*.—Head silvery white. Antennæ fuscous, slightly annulated with white; basal joint pale saffron. Fore wings pale saffron, with two silvery white, moderately broad bands, black margined externally, one near the base and the other on the middle of the wing, and both somewhat oblique; cilia of the general hue. Hind wings dark grayish, cilia the same.

The larva belongs to the second larval group of this genus, but the body much more contracted than that of any other larva I have seen. Its form is almost that of a flattened ovoid, the rings separated by deep incisions, and each forming in the sides a projecting mammilla.

The larva mines the upper surface of the leaves of oaks in September, and doubtless also in the summer months. The mine is a linear tract, sometimes curved or wavy, gradually increasing in breadth from the beginning to the end, or as the larva increases in length, with the "frass" deposited on each side of the tract and marking its outlines by two black lines. The position of the larva within the mine is likewise a peculiar one, as it is always placed transversely to its course, and hence the deposition of the "frass" on the sides, and the gradual increase in breadth as the larva grows in length. Its head is blackish brown; the body pale greenish, with pale brown dorsal maculæ, darker on their edges. It undergoes transformation in the end of the mine, preparing a circular cell or slightly silk-lined cavity, and leaves the last larval cast outside of it. The fall brood of larva become imago about the middle of May.

*L. cratægella*.—This insect is found on the apple and wild cherry, (*P. serotina*), without undergoing any variation, which I can detect. I thought beyond doubt, that that in the leaf of wild cherry, must be a distinct species, for the larva has a habit unusual to larvæ of this group, and which I have not noticed in those on the thorn and apple, although, doubtless, they correspond. The habit I refer to in wild cherry miners, *consists in deserting an old mine to form a new one*, reminding one strongly of the early habits of the *Ornix* larvæ. The larva enters along the midrib to form a new mine, which I have found in various stages of advancement, besides the old and tenantless mine in another portion of the leaf.

TISCHERIA. (See Paper No. 2.)

*T. malifoliella*.—Head and antennæ shining dark brown; face ochreous. Fore wings uniform, shining dark brown with a purplish tinge, slightly dusted with pale ochreous; cilia of the general hue. Hind wings dark gray; cilia with a rufous tinge.

The larva mines the upper surface of the apple leaf. The mine is flat, at least until the larva enters the pupa state, and begins as a slender *white line*, dilating as it increases, and is ultimately formed into an irregular brownish colored patch, which is sometimes extended over the beginning. This is then shown on the separated epidermis as a white line or streak. The head of the

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larva is brown; the body uniform pale green; first segment brownish, with a short, vascular greenish streak. When the pupation begins the leaf is thrown into a fold, which is carpeted with silk, and the pupa lies within it. This state begins about the latter part of September, and the imago appears early in May.

#### ANTISPILA. (See Paper No. 3.)

*A. Isabella*.—Head golden. Antennæ purplish brown. Fore wings purplish brown, without violet and greenish reflections, with a pale golden band near the base, inclined toward the base, not constricted on the fold, but broadest on the inner margin. Near the tip of the wing is a small pale golden costal spot, and one of the same hue nearly opposite on the inner margin. The hind wings have a greenish reflection; in *Nyssæfoliella*, they are rather deep purple.

The larva mines the leaf of *Isabella* grape in September. Its head is brown; the body yellowish white, with a few black dorsal spots on a dark green ground, on the middle segments and beneath a spot on the fourth and fifth segments: first segment dark green. It cuts out a very large, nearly round disk, during the latter part of September, and appears as an imago in the latter part of May.

*A. viticordifoliella*.—The larva mines the leaves of wild grapes. Its head is brown; the body yellowish green, without dorsal or ventral spots; the first ring brown. It may be taken in August, and in the beginning of September it cuts out a small oval disk and enters the pupa state. I have not succeeded in breeding the imago, but have no doubt it is specifically distinct from any heretofore described.

#### ASPIDISCA.

(See Proceedings, Jan'y., 1880, p. 11.)

The diagnosis of this genus was made from two specimens of *A. splendoriferella*. In insects so extremely small and fragile, even when relaxed by moisture, it is no simple task to make a correct diagnosis from a single examination. The reader will therefore please correct in the January number of the Proceedings as follows: *Labial palpi extremely short and slender, much separated. Tongue naked and scarcely as long as the anterior coxæ.*

*A. luciflua*.—Head silvery. Antennæ rather dark fuscous. Fore wings silvery from the base to the middle, and thence to the tip dark fuscous varied with golden. Near the tip are three short, costal silvery streaks adjacent to each other; the first is longer than the others, with converging dark margins, and a golden patch on its internal side; the second with straight dark margins, and a golden patch beneath and adjoining it; the third is unmarginated except by the external margin of the second streak which separates them. Opposite the first costal streak is a dorsal, tapering streak of the same hue, and placed in the dark fuscous portion of the wing. From the second golden spot to the middle of the hinder margin is an oblique silvery streak, sometimes separated into two spots. At the extreme apex is a deep black triangular spot; the cilia grayish, tinged with pale brownish.

The larva may be found in September and October mining the leaves of hickories. The head, first and second segments are brownish, with a reddish tinge; body brownish-green, with a dark green vascular line and three blackish dorsal spots on the middle segments. Early in October the larva cuts out an oval disk and enters the pupa state, to appear as an imago early in June. The perfect insect is larger than *splendoriferella*.

#### PARECTOPA.

The fore wings are lanceolate. The disk is acutely closed behind, at the apical third of the wing and narrow. No costal nervure. The subcostal sends 1860.]

off quite near the base of the wing a long marginal branch, and near its end, two other branches to the costa. From the acute apex of the disk arises the apical branch, which, near its origin sends a branch to the costa, and about its middle becomes bifid, sending one branch to the costa near the tip, and the other to the inner margin beneath it. The median is *three-branched*, the posterior vein arising somewhat interiorly to the costal origin of the second marginal, and is most distinct on the inner margin, being faintly indicated from its middle to its origin.

Hind wings very narrow, almost setiform. The disk unclosed. The costal nervure is well indicated and long, reaching almost to the tip of the wing. The subcostal is furcate beyond the middle of the wing and is attenuated toward the base almost from its bifurcation; it runs close to the costal trunk. The median nervure is furcate within the middle of the wing, on the inner margin.

Head with long, loose scales above, forming a slight tuft between the antennæ. Forehead rounded. Face narrow and short, somewhat retreating and smooth. No ocelli. Eyes small, round, salient and naked. Labial palpi moderately long, slender, smooth, pointed and drooping, (in the living insect most probably ascending); second joint slightly thickened at its end. Maxillary palpi not perceptible. Antennæ inserted on the front; filiform and simple; basal joint scarcely thicker than the stalk and short; nearly as long as the fore wings. Tongue naked, slender, nearly as long as the thorax beneath.

*P. lespedezaefoliella*.—Head and face white. Labial palpi, second joint dark fuscous, the third white. Antennæ dark grayish fuscous. Thorax blackish brown. Fore wings blackish brown, with three silvery white spots along the inner margin, one almost at the base of the wing, one at the apical third, and the other intermediate between them. On the costa are two silvery white spots, the first a little exterior to the second dorsal; the second costal opposite the third dorsal. Along the hinder margin is a black hinder marginal line, or two decided converging black streaks, one from the costa and the other from the inner margin, meeting at the tip where there is a small silvery white spot. The cilia along the *hinder margin are silvery white tipped with blackish*, and along the inner margin dark gray. Hind wings dark fuscous, cilia the same.

The larva mines the leaves of bush-clover, (*Lespedeza violacea*) early in September. It makes a whitish blotch mine, with a number of narrow, lateral mines, or rather wide galleries running out from it, on the upper surface of the leaf. The blotch is chiefly in the middle of the leaf, the larva mining along the midrib in the first instance, and when disturbed it conceals itself by retreating to the midrib, and applies itself along the course of it. Hence tenanted mines may easily be mistaken for deserted ones. The mine never contains "frass," and the larva seems to leave one capriciously, whilst it is yet small in extent, to form a new one; this it does by penetrating the under cuticle of the leaf. In the course of larval life, many new mines are formed and the insect is a troublesome one to breed. The larva is cylindrical, slightly tapering from the first segment, and the body bright, concolorous green. It deserts its food-plant about the middle of September to form its cocoonet; this is woven upon some substance on the ground, in the vivarium, in a pucker on a leaf, or under a turned-down portion of the edge, and is white. It appears as an imago early in May.

I have no good description of this larva in my notes, but have of another having precisely similar habits, and in appearance very like it. It mines a species of *Desmodium* plants, nearly related to *Lespedeza*, and is probably the same insect, or at least of the same genus as the above. The body of this larva tapers posteriorly; it is submoniliform and slightly flattened, with the segments roundly mammillated on the sides. The feet are three, the abdominal three and the terminal one pair. The head is pale brown; the body

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bright green, tinged with yellowish. The larvæ desert their mines to form new ones, hence they are never extensive, sometimes blotches, and again irregular galleries along the midrib, with lateral branches. The "frass" is voided at the entrance opening beneath. I was not successful in breeding the larvæ on *Desmodium*.

#### BUCCULATRIX Zeller.

(See Paper No. 3, Proceedings, Jan., 1860. The authority there given is a mistake.)

*B. pomifoliella*.—Head and face very pale ochreous, with the tuft tipped with brownish. Antennæ pale ochreous, dotted above with dark fuscous. Fore wings whitish, tinged with pale yellowish, freely dusted with brown. On the middle of inner margin is a large dark brown, oval patch, forming, with its opposite when the wings are closed, a conspicuous, nearly round dorsal patch; a streak of the same hue, from the costa opposite it, running to the inner angle of the wing and tapering from the costa where it is broadest. At the tip is a round, dark brown apical spot, and in the cilia a dark brown hinder marginal line. Hind wings pale brownish ochreous, cilia the same.

The larva feeds externally on the leaf of apple, at least at the time it was taken, in the latter part of September. It is cylindrical and submoniliform; tapers anteriorly and posteriorly; with punctiform points and isolated hairs, first segment with rather abundant dorsal hairs; thoracic feet three, abdominal four and very short, terminal one pair. Head small, ellipsoidal, brown; body dark yellowish green, tinged with reddish anteriorly; hairs blackish and short.

Early in October the larva enters the pupa state, weaving an elongated, dirty white, ribbed cocoon, and appears as in imago during the latter part of the following April or early in May.

*B. agnella*.—Head and face sordid white, the latter touched with fuscous. Antennæ dark fuscous. Fore wings whitish, washed with pale luteous-brown, which prevails especially towards the tip and along the fold. About the middle of inner margin, on the fold, is a small dark fuscous mark, consisting of a few scales. *The costa is dark fuscous from the base*, and about the middle of the wing gives off a short oblique streak of the same hue, and another near the apical third, which is fuscous near the costa and pale luteous-brown beyond it, and margined exteriorly with white, especially on the costa. The long scales in the cilia are tipped with dark brown. Hind wings brownish, cilia brownish with a rufous tinge.

Taken on wing about the middle of May.

#### MACHIMIA.

Fore wings with the hind margin obliquely pointed. The subcostal nervure gives off a marginal branch near the basal third, and at the end of the disk subdivides into four nervules, of which the apical is furcate near the tip. The median is four-branched, the medio-posterior remote from the penultimate. The submedian is furcate at the base. In the disk is a long, faintly indicated secondary cell. The neuriation of the hind wings like that of *Depressaria*. The discal nervure is oblique. The interior basal angle rounded, and the margin slightly excised behind it.

Head and forehead between the antennæ, *shaggy*. Face rather smooth, depressed and retreating. No ocelli. Eyes small, oval and salient. Labial palpi rather long, remote from the face, slender, curved and ascending; *second joint roughened with scales*; the third smooth, aciculate, and about one-third less long than the second. Maxillary palpi very short. Antennæ about one-half as long as the fore wing, simple and filiform; basal joint short. Tongue scaled, about as long as the anterior coxæ.

1860.]

*M. tentoriferella*.—Labial palpi pale yellowish; basal half of the second joint blackish or dark fuscous. Fore wings reddish ochreous, with dispersed dark fuscous atoms. The extreme base of the costa is blackish, from a small black spot on its edge; with three blackish brown spots arranged in a triangle in the middle of the wing, one about the middle of the disk, another on its end, and one in the fold beneath them; cilia rather long and russet colored. Hind wings rufo-fuscous, along the discal portion of costa, pale ochreous.

The larva tapers posteriorly from the head; terminal legs short, placed posteriorly, projecting beyond the shield; abdominal legs short; with papilliform points in squares, each bearing a hair; body cylindric and sub-moniliform. The head is large, carried horizontally; somewhat flattened above, but rounded; cervical shield doubtfully indicated, its color dark green. Body dark green, at first uniform, but after the last moult, a double yellowish-green dorsal line is added.

It may be found during the latter part of July, on the leaves of wild cherry, oaks and hickories. On the underside of the leaf it throws a closely woven sheet or web from the midrib to the side of the leaf, and draws it into a shallow fold. This sheet or tent is not much longer than the larva itself, open at both ends, transparent, shining and vitreous. Beneath this it rests during the day, and in the night leaves it to feed on the edges of the leaf, retreating to its cover if alarmed. To this it clings most tenaciously if disturbed, thrusting its head from beneath it, shaking it from side to side, or if disturbed in front, retreats, without leaving it, and defends itself stoutly with its mandibles. Its length is about half an inch. When it leaves a leaf to form a new tent on another, it always devours the silk of the one it deserts.

During the latter part of August or first of September it enters the pupa state and forms its cocoon, by turning down a portion of a leaf, carpeting it with silk and binding its edges closely. The opening left at the ends, corresponding to the tail of the pupa, is closed densely, and the other with loose silken threads. The pupa case is very dark reddish brown, and it remains in situ when the imago escapes. The antennæ-cases as long as the wing-cases; abdomen rather short and blunt; cylindrico-conical. The imago appears during the latter part of September.

#### PSILOCORISIS.

The neuration of the wings differs in scarcely any respect from the foregoing genus, except that the medio-posterior vein is *not remote from the penultimate*. The posterior veins of the median are very much curved. The structure of the fore wings in both these groups is much like that in the Tortrices.

Head smooth. Face rounded. Ocelli none. Eyes large, round and salient.

Labial palpi long, remote from the face, recurved, rather slender; second joint rather flattened, *smooth, with appressed scales*; third smooth, slender and pointed, nearly as long as the second joint. Maxillary palpi short, distinct. Antennæ about one half as long as the fore wings, simple and filiform; basal joint rather long and subclavate. Tongue one-half as long as thorax beneath, scaled.

*P. quercicella*.—Head and thorax dark yellowish-brown. Labial palpi, second joint ochreous, with a black line on the edge beneath; third black, with two yellowish white stripes in front. Antennæ ochreous, with a black line above, terminating in black spots; basal joint with two black stripes in front. Fore wings yellowish brown, varied with blackish irregular striæ, chiefly from the costa, with a black dot on the end of the disk. The posterior margin is tipped with blackish; the cilia are yellowish brown, containing two dark fuscous hinder marginal lines. Posterior wings pale ochreous, cilia the same.

The larva tapers from the third segment anteriorly and posteriorly; flattened

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above and beneath, submoniliform; no dorsal papilliform points, but two rows on the sides; abdominal and terminal feet very short, the latter placed posteriorly. Head small, cordate, horizontal. The body is yellowish or pale greenish, the head, 1st, 2d, and 3d segments black.

It binds the leaves of oaks together, in August and September, and picks out the parenchyma between the network of veins. In the latter part of September it weaves a slight cocoon between two leaves, (in nature it is probably made elsewhere than between the leaves of its food plant), and becomes a rather short, thick pupa, with the antennæ cases moniliform and longer than the wing-cases, beyond the end of which they project as an obtuse spine. It appears as an imago in March or April.

*Labial palpi very long and recurved, the tips extending back as far as prothorax, but remote from the face and head.*

*P. reflexella*.—Head brownish, tinged with ferruginous. Labial palpi dark ochreous, with a black line on the edge of second joint beneath, and three black lines on the third, one in front and one on each side. Antennæ dark ochreous, annulated with dark fuscous; basal joint with two black stripes in front. Fore wings dull ochreous, profusely dusted with reddish fuscous; cilia short and dark colored. Hind wings fuscous.

This species very closely resembles, physically, *M. tentoriferella*. The labial palpi are longer, however, more recurved, and the second joint perfectly smooth, whilst in *tentoriferella* it is roughened with scales.

Both these genera likewise closely approach the European genus *Phibolocera*, and it is not impossible that one of them may be really identical with it, notwithstanding the longer antennæ and shorter third joint of the labial palpi in the European species.

#### MENESTA.

Fore wings obtusely pointed above the middle, elongate-ovate. Disk closed by a very faint nervure. The subcostal subdivides into five nervules, the first of which is from the middle of the disk, the fourth being the apical, and the fifth the post apical from the middle of the disk behind. The median is three-branched, the medio-posterior being opposite the third subcostal vein. The fold is thickened at its end and runs into the basal third of the median. The submedian curved, and shortly furcate at the base.

Hind wings somewhat trapezoidal, slightly emarginate on the hind margin beneath the tip. The discoidal cell unclosed. The costal nervure is long and extended nearly to the tip. The subcostal somewhat attenuated at its base, distinct from the costal, and furcate at the apical third of the wing. The median three-branched, the superior and central veins on a common stalk.

Size small. Head and face smooth, minutely scaled. Forehead and face rounded and very broad. Ocelli none. Eyes vertically placed, minute, oval, salient. Labial palpi smooth, slender, curved and ascending equal to the vertex; second joint slightly thickened towards its end; third very slender, pointed, and not more than one-half as long as the second. Maxillary palpi very short, distinct. Antennæ much separated at their base, about one-half as long as the fore wings, filiform and ciliated beneath microscopically, *with one hair to each article*; basal joint very short, scarcely thicker than the stalk. Tongue scaled at the base, slender, and about as long as the anterior coxæ.

*M. tortriciformella*.—Labial palpi fuscous, towards the base whitish. Head, antennæ, and face dark luteo-fuscous, the latter whitish beneath. Fore wings dark brownish with a purplish hue, with a small lunate white spot on the end of the disk. Hind wings dark fuscous, cilia the same. Feet pale yellowish, the ends of middle and posterior tibiæ touched with fuscous; the middle tarsi fuscous externally, and the hind tarsi banded with fuscous at the base.

1860.]

## NEPTICULA Zeller.

*N. rubifoliella*.—Head dark luteous. Palpi somewhat paler luteous. Antennæ luteous, basal joint silvery white. Fore wings blackish-brown, with a rather narrow, curved silvery band about the middle of the wing. The band is concave toward the base of the wing, and shows a tendency to be interrupted in the middle. Cilia whitish. Hind wings grayish, cilia the same.

I have very carefully compared this insect with the description and delineation of *N. angulifasciella*, of Stainton, in the first volume of the *Nat. Hist. of the Tineina*, and though unwilling to believe the fact, I cannot resist the conclusion, that it is the same species. I have not named the species in accordance with this conviction, because as yet I have secured but a single specimen.

The larva mines the leaf of blackberry in September. It makes a blotch mine on the upper surface of the leaf, beginning as a slender gallery, extending quite a distance, usually along a vein of the leaf, before being enlarged into a blotch. The body of the larva tapers posteriorly, the terminal rings being attenuated; color pale green, with a bright dark green vascular line; head greenish-brown and small. The larva was not taken from the mine for description. It leaves the mine very early in October to spin an oval, very dark reddish brown cocoon, and appears as an imago during the latter part of May or early in June. There is, therefore, in all probability, a summer brood, which may be found in July and August, if the conjecture is correct.

I have no doubt that subsequent observation will prove this insect to be the same as *angulifasciella*, and I am no little astonished to find so minute a creature common to the continents of Europe and America. During the coming season I will endeavor to record minutely the history of the preparatory states of the American species.

## PHALENITES.

## DORYODES Guenée.

I would notice this genus here merely to express my ideas respecting its classification. M. Guenée says of it, that the insects belonging to it have so doubtful an aspect that he is uncertain not only in what family, but in what division to place it. He notices its superficial resemblance to *Crambus*, or *Chilo*, and to the genera *Senta* and *Meliana* of his division *Noctuelites*, but says that from the form of antennæ and labial palpi, the absence of ocelli, (herein, however, M. Guenée is in error, for they are *not* absent), and from some other characters, not designated, it cannot be mistaken for one of the *Noctuelites*. While acknowledging the very notable differences between this genus and those with which it is associated, he does not inform us what ruling considerations induced him to prefer for it a place in his division *Phalenites*, (*Geometrina*) and the family *Ligidæ*.

In my own view, this genus has few or no structural characteristics of the *Geometrina*, and its neuration just as undoubtedly places it in Guenée's group *Noctuelites*, (*Noctuina*); this, too, is a position justified by its general structure. If the subpectinated antennæ of the ♂, and the comparatively slender body, are considerations sufficient to overrule the position of the wings in repose, the partial folding of the hinder pair, the structure of the legs, the *presence of ocelli*, and the purely noctuiform neuration, then indeed does the lesser amount of evidence overbalance the greater. Had M. Guenée not overlooked the presence of ocelli, his decision might have been different, for these organs are always absent in the *Phalenites*, and the possession of geometriiform antennæ is not enough to neutralize their presence or to determine the place of the genus.

In the hope that some of the entomological students of New England, where one of the species of this genus certainly is found, may be able to make out

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its larval history, I will describe the species in my collection, and extract M. Guenée's description of the other. The first species may be easily recognised by means of Guenée's very good figure, and as a generic diagnosis would not facilitate recognition, particularly without the means of reducing it from a general to a special group, I will omit any generic description.

*D. acutaria*.—Herr. Sch. Sup., p. 74, f. 447. *Guenée Uranides and Phalénites, Suites à Buffon*, x. 233, pl. 17, f. 6.

The appearance of the imago is somewhat crambiform. The fore wings pale ochreous, tinted with dark luteous (with clear grayish violet, *Gn.*) along subcostal nervure and its marginal branches, and with a rather broad blackish streak beneath the median nervure, extended from the base and curving behind upwards toward the tip, bordered on the costal side by a silvery line, and one of the same hue behind, along the curved portion. In the disk are two blackish dots, one on the discal nervure and the other about the middle of the disk. Hind wings ochreous white. Guenée's sp. from Ga.; mine from Mass. Col. of Dr. Chas. Girard.

*D. spadaria*.—*Gn.* x. p. 234. "Very near the preceding, but larger, with the wings more oblong. The superior wings are more acute, and the terminal border perfectly straight. Their color is darker, grayer, with the designs finer and less distinct. The inferior are more developed and more oblong; they have the internal angle and part of the side tinted with blackish gray. The abdomen is perceptibly longer, and the antennæ also proportionably longer and slenderer."

In his generic diagnosis, M. Guenée says of the abdomen, "*dépassant beaucoup les ailes inférieures*," whereas in my specimens of *acutaria*, the abdomen exactly equals the length of the hind wings, when the wings are folded. He refers, doubtless, to the expanded wings.

#### PYRALIDÆ.

##### DESMIA Westwood.

This is one of the few genera in M. Guenée's family Asopidæ, of his division Pyralites, the *males* in which are characterized by nodosities or curvatures of the antennæ. As Guenée, at the time of writing his volume on *Deltoides* and *Pyralites*, had not seen the males of this genus, and his description, in the general remarks on the genus, does not accurately represent their structure, I will describe these organs in the male, of which I have several specimens. In noticing the singular conformation of the male antennæ, he says: "*sont d'abord renflées en massue, puis étranglées et munies d'un gros article ovoïde, puis enfin grêles et ciliées jusqu' au sommet.*"

About the middle of the antennal stalk, is placed a transverse, nearly vertical plate, which on the external side has a triangular elevation, and adjoining this, toward the base, is a narrow tuft of obliquely placed scales, running along the upper surface of the stalk. Toward the apex of the organ, immediately following this protuberance, one-half of the stalk is excised from above and slightly tufted internally. There is no thickening of the stalk except at the protuberance, and beneath it is microscopically pubescent from the base to the tip.

*D. maculalis*.—West. Mag. Zool., 1831, pl. 2, Guenée, vol. viii. 189. Blackish brown. Labial palpi blackish brown, while beneath. Fore wings with an irregularly oval white spot placed partly on the middle of the disk, the median nervure and the fold; another of the same hue and nearly round, on the base of the nervules behind the disk. Hind wings with a single, discal white spot. Abdomen with a white band at the base, a dorsal spot on the middle, and a short white dorsal streak at the tip.

Mass. and Ill. Col. of Messrs. Scudder and Kennicott.

1860.]

## EUSTALES.

Fore wings with two subcosto-marginal nervules, given off very near the posterior-superior angle of the disk, the stalk of the second almost in contact with that of the apical branch near their origins. The apical and post-apical arise together at the angle of the disk, the former being furcate near the tip, sending a nervulet to near the costa. The disco-central is given off from the middle of the discal. Median four-branched, the medio-superior on an extremely short, vertical peduncle; the posterior arising at a point somewhat behind the costal origin of the first marginal branch.

In the hind wings the costal nervure is furcate at the tip of the wing; the oblique intercostal branch is long and exterior to the cell, and the subcostal simple and attenuated at the base. The median four-branched, the superior which continues the curved discal nervure, almost in actual contact with the following branch. The hind wings are broader than the fore wings, and about one-fourth less long.

Head with ocelli, rather remote from the eyes; face rounded, smooth, and rather narrow. Eyes large, round and prominent. Labial palpi rather thick, curved and ascending to about the middle of the face; second joint thickened beneath with scales; the third rather smooth, elongate ovoid, and about one-half as long as the second. Maxillary palpi rather long, curved and ascending, their tips nearly equal to those of the labial palpi, roughened with scales, distinctly three-jointed. Antennæ about as long as the body, with triangular patches of shining scales along the stalk above; inserted above the middle of the eyes, with bases contiguous and microscopically pubescent beneath. Tongue scaled at base and when unrolled, does not extend beyond the tips of the labial palpi. No abdominal apron (*tablier*) perceptible. The posterior coxæ rather short; the length of the tibiæ and tarsus, of the hind pair of legs, equal to that of the entire body.

E. *Tedyuscongalis*.—Fore wings ochreous yellow, paler along the costa, dusted somewhat with reddish fuscous, with a moderately broad white band from the costa near the tip, curving toward the base of the wing in the *submedian interspace*, where it becomes rather broader, to the middle of the inner margin. Behind this, near and parallel to the hind border, is a narrow white band, not extended to the costa nor inner margin, and bordered exteriorly with a blackish-brown line. The exterior border of the wing is paler yellow than the general hue. Hind wings white, with an oblique fuscous band above the middle, tapering to the external margin; a broad one of the same hue near the hinder margin, having a pale ochreous-yellow spot at each end, and margined behind with a white streak having an external delicate black line. The terminal margin pale ochreous-yellow, with four black points having ochreous-yellow pupils, arranged along the margin from the middle of the wing toward the exterior angle.

Lake Teedyuscong, Pike county, Penna., in the latter part of June or early in July.

The ornamentation of this insect resembles in a remarkable degree that of *Oligostigma juncealis* Gu.; it cannot, however, be a member of the same genus.

HYDROCAMPÆ? Latreille.

Guenée, vol. viii. 273.

Fore wings with one subcosto-marginal from near the superior angle of the disk; the apical branch, at its basal third, gives off a branch to the costa, and somewhat behind its apical third becomes furcate; the post-apical arises at the angle, and the discal nervule on the costal side of the cell. Median four-branched; the superior on a very noticeable peduncle; the posterior remote from the penultimate, which together with the other branches are aggregated at their bases.

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In the hind wings the costal nervure has a rather long fork. The intercostal branch exterior to the cell and extremely short, and from this point posteriorly the stalks of the two nervures are almost in contact. The median nervure four-branched, the superior on a moderate peduncle.

The structural differences between this and the foregoing genus are: the labial palpi slenderer; third joint very short, about one-third as long as the second, which is squamous beneath. Maxillary palpi slender, smooth, porrected; with tips equal to the end of the second joint. Tongue scaled at the base, *at least one-half as long as the body*. The length of the middle tibiæ and tarsus equal to that of the body; the hind tibiæ and tarsus exceeding the length of the body.

*H. ? formosalis*.—Fore wings pale yellow, with three white patches on the disk, the two nearest the base small and slightly margined with fuscous, the one on the end of the disk margined internally by an oblique fuscous line; a white patch on the nervules behind the disk, margined externally by a fuscous line convex toward the base of the wing and hooked at each end, with a white patch at the tip and one beneath it at the inner angle, both margined externally by a submarginal curved fuscous line. In the middle of the *submedian interspace* is a nearly oval white patch encircled with fuscous. Hind wings white, pale yellowish beyond the middle, with a fuscous line near the base from the inner margin, not extended to the costa; a wavy double line of the same hue rather external to the middle, and a white spot near the tip and one about the middle of the hinder margin, both margined externally with a fuscous line. On the disk is a pale yellowish spot.

Lake Teedyuscong. Imago, July.

#### CATACLYSTA Herrich-Schaffer.

Fore wings with the first subcosto-marginal vein and medio-posterior opposite at their origins. The apical vein runs into the costa before the tip, and gives rise to a marginal branch at its basal and apical third. The post-apical runs into the produced tip of the wing and gives origin to the discal nervure. Hind wings, the costal is shortly forked near the tip. The subcostal arises from the costal within the disk *and is not produced toward the base*. *The median is three-branched*. Head without ocelli. Antennæ of the ♂ densely pubescent. Tongue as long as the thorax beneath.

The structure of the posterior wings in the species described below forms very nearly a parallel case to *C. dilucidalis* described by M. Guenée. The costal nervure of *dilucidalis* is not, however, represented bifid, and the branch which corresponds to the costal nervure does not arise within the cell and give origin to the discal, but exterior to the disk and the discal nervure arises behind it from the costal. They both concur in the absence of the discal, or independent nervule, and in the median being three-branched. May not *dilucidalis* be an American species? I cannot determine the question, as M. Guenée's description is imperfect, from the fact that it was drawn from badly preserved specimens.

*C. fulicilis*.—Fore wings white, fuscous at the costal portion of the base, with a broad band near the base and a narrow wavy fuscous line crossing the middle of the disk, sending from the median nervure a curved line to the inner margin, convex exteriorly. The space between these lines is frequently dusted with fuscous. From an elongated fuscous patch limited below by the subcostal nervure, on the middle of the costa, departs an oblique ochreous band, inclined to the inner angle and margined along the discal nervure on both sides, with fuscous; and from the posterior end of the costal patch, a curved line joins the external dark margin of the band enclosing an oval spot of the general hue. A subterminal band tapers to the inner angle, leaving on each side of it two converging tapering bands of the general hue. Hinder margin ochreous, margined internally with fuscous. Hind wings white, with 1860.]

a broad fuscous band near the base, corresponding to that on the anterior, and touched with ochreous in its middle; with a median yellowish brown curved line, not reaching the costa, and exterior to this, the apical half of the wing is dusted slightly with dark brownish. Along the terminal margin, is a row of five black lunules, connected by *intermediate metallic violet-blue spots*, and on the extreme margin behind these latter spots, *a row of orange yellow dots*; while the band is tinted interiorly with the same hue, limited by an interrupted slender dark brown line near the band.

Pennsylvania, Easton.

In ornamentation the following species is very like the foregoing. It differs from it structurally in the following respects: Fore wings with the first subcosto-marginal and medio-posterior opposite at their origins; the second marginal arises at the angle of the disk; the apical vein forked at about its middle, the lower branch entering the costa before the tip. In the hind wings the costal has a long fork; the intercostal joins the subcostal at the point of departure of the discal and seems to be a continuation of it, and the subcostal is continued to the base of the wing. *Head with ocelli*. Tongue as long as the thorax beneath. The first joint of labial palpi thickened with scales.

*C. ? helopalisis*.—Fore wings white, dusted with pale fuscous toward the base, and on the fold behind; with a narrow fuscous band crossing the base of the disk. Near the end of the disk is a yellowish brown line, crossing the wing, deeply and acutely angulated on the fold; and near the tip are two narrow oblique streaks of the same hue converging to the inner margin above the angle, the first of which is recurved toward the disk, encircling an obliquely placed oval spot of the general hue on the nervules behind the disk. Along the hinder margin, near the inner angle, are a few indistinct, iridescent spots; the margin and cilia yellowish brown. Hind wings white, with a short narrow fuscous band near the base, corresponding to that on the fore wings; a median line of the same hue, not attaining the exterior margin and the apical portion of the wing exterior to it sprinkled thickly with fuscous. Hinder margin with a row of black spots, having violet-blue metallic pupils and tinted with pale orange between the spots.

Lake Teedyuscong.

#### SIRONIA.

In the fore wings two distinct subcosto-marginal nervules leave the disk, the first and the medio-posterior opposite; the second marginal arising at a point nearly intermediate between the two hinder branches of the median; the apical vein is forked a little beyond its middle; the post apical and disco-central arise near each other on the costal side of the wing. The median is four-branched. In the hind wings the intercostal is short, remote from and exterior to the upper angle of the disk. There is nothing characteristic in the shape of the wings; the posterior are broader than the anterior.

Head with ocelli. Antennæ pubescent beneath. Labial palpi, *when undenuded*, moderately thick and squamose beneath, ascending to the middle of the front; third joint short and rather smooth; *denuded*, tapering to the tip from the base, slender and cylindrical; the basal joint long, equal to the front; the second and third short and equal in length. Maxillary palpi two-jointed, with tips nearly equal to those of the labial, ascending and somewhat tufted at the end. Tongue scaled at base, exceeding the labial palpi *by one half its length*. No abdominal apron perceptible; the length of the posterior tarsus and the tibia equal to that of the body.

*S. maculalis*.—Fore wings white, dusted with fuscous along the base of submedian nervure; with a fuscous spot at the base of the fold and one of the same hue in the middle of submedian interspace, and a broad, irregular band adjoining the disk behind, extended from the costa to the inner angle, with the exterior half nearly square, and the interior somewhat paler, curved

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and tapering. The apex of the wing is touched with fuscous, and the ends of the nervules slightly dotted with the same hue. Hind wings concolorous, pure white.

Lake Teedyuscong. July.

Before concluding this paper, I desire to record my views respecting the unnecessary amount of labor, loss of time and uninviting study, which the details of M. Guenée's mode of systemization imposes on the American student. MM. Boisduval and Guenée, in the important and comprehensive works which engage their labors at the present time, are not writing treatises on local faunæ, but on that of the entire world, in so far at least as lepidopterous insects are known; and students everywhere have a right to expect that the difficulties of classification will be diminished, rather than complicated, by their treatment of the various groups which may be included in their works. The author who would be cosmopolitan in his representation of this subject, at the present day, cannot neglect, in justice to those who may follow his footsteps through nature, to endeavor to lighten their burden of study and to economize their time, by leading them with all the lights of his knowledge, through the complicated mazes of doubt, engendered by the numerous and perplexing affinities existing in beings of the animated world. The chief object of classification is simply to communicate our own systematic conceptions to others, and to mark the graduations in the arrangement in such a manner, as will enable them easily and quickly to recognize its groups. How has M. Guenée facilitated the recognition of genera, whilst he has greatly increased the number of them, or lightened in any respect the systematic labor of the foreign student? Is it enough that he should content himself with carefully written diagnoses, and compel the student to examine critically and minutely every one in any of his family groups, before being able to decide whether the insect he may wish to classify belongs to any of them, or is not edited? A system which both reason and convenience approves, is that which enables the student easily to find what he seeks, and not that which compels him to master the genera peculiar to every other portion of the globe, in order to assure himself whether a group has been established into which his specimens can be admitted.

The omission of synopses of genera, when the number of them in his family groups calls for such tables, as it does so frequently, is a most serious, not to say unpardonable, defect in the six volumes published by M. Guenée. There is no student of American lepidopterology, compelled to study his works, who will not regret that he has so extensively described our fauna; and the fact that so much time and patience and labor are necessary to determine whether a generic description is given by the author, of one of our moths, of which everything is unknown, perhaps, except the division to which it belongs in his system, is an actual and real impediment to the development of the study in our country. In the examination and comparison of lepidopterous insects, M. Guenée recognizes beyond doubt, each genus under a family by some distinctive structural trait, and why cannot all these be presented to the student in synopses, as well as they are apparent to his own perceptive faculties? Without these conveniences of comparative study, the student is compelled to do the work of the author anew, and, at an immense disadvantage and loss of time, to search for what is distinctive, in by no means sharply, though diffusely characterized groups, which include very frequently ornamentation as one of their chief characteristics. In the cabinet of specimens, all this is almost apparent at a glance, and it is the result of this educated sense that seizes quickly what is distinctive in a variety of forms, that the student has a right to look for in synopses.

M. Guenée expressly declares in one of his early works in the "*Suites à Buffon*," that in giving the meagre synopses of tribes and families, contained in the series, he is merely following the custom of M. Boisduval, and that he 1860.]

does not consider them of any value in a natural system. It seems strange that any one, especially M. Guenée, could entertain such an opinion, when a slight amount of study is sufficient to convince any naturalist, that there is no severer test to be applied to a system than the construction of synopses containing exclusive categories founded on structure. Groups agreeing most closely are brought into direct contrast, and if the most trivial and unimportant structural peculiarities, except in the case of genera, are called into requisition to distinguish them, whatever may be their comprehensiveness, is not the fact very strongly suggestive of want of naturalness, nay, of purely artificial, arbitrary distinctions, produced by the desire to create differences where there are none actually in nature? But even admitting they are formed on a purely artificial basis, and that all synopses are essentially artificial, need the fact in the character of a simple index to systematic conceptions, in any manner affect the most natural arrangement of the group in the text? And could there be any better system than that which unites the convenience of the one to the truthfulness of the other?

One of the chief objects in systematic and descriptive works certainly ought to be, a ready and certain recognition of groups and individuals; and to facilitate this, no care or labor bestowed on synopses intended to promote this object and prevent loss of time to the inquirer, can be regarded as superfluous or as a tax on authorship. The world is thus the gainer in economy of time, and science is more rapidly advanced. And surely, when one reflects how few there are who devote themselves to scientific study, the additional labor thus expended by the author carries into the future the most fruitful results. It is the neglect of the synoptical system that has converted, even at the present day, the great majority of entomologists everywhere into a class of mere collectors and picture-recognizers, and which calls for a profuseness of illustration to be met with in no other department of Natural History. And on the other hand, its tendency is to institute, if indeed it has not already done so, an Egyptian priesthood over nature, in that body of European "authorities" skilled in the interpretation of its hieroglyphics, and who furnish students with a complicated, skeleton method, all of whose details they must painfully acquire, before they can in the humblest degree, aspire to question systematic nature for themselves. How laborious, time consuming and discouraging this is to the American student, who has "no authority" to consult, save the ambiguous phrases of diagnoses, no classified collections to study, and by the comparison of forms to educate his perceptive powers in generic and family differences, cannot be appreciated by those who have all these aids, and who are the heirs to almost hereditary entomological lore and collections, handed down from one generation to another.

The times, however, demand of MM. Guenée and Boisduval a system of convenient study. The former, it is true, attempts to meet this demand by separating the portion of the order of which he treats, first, into divisions, and these into tribes, and these again into families; but scattered as they are through the body of the work, or through several volumes, this complication of arrangement is far from fulfilling the needs of the student. It is not *natural*, and is therefore perplexing, and has caused the author to mistake well marked groups within families, for families themselves, or even higher divisions. When the individual structure of two beings placed in different, sometimes widely separated families, approach so intimately that they can be distinguished only by resort to trivial characters, what more conclusive proof of artificiality, and mere brain and paper-created distinctions, can the naturalist desire?

The elaborate description of groups is a highly commendable trait in a systematic work. They should be, however, merely a confirmation of the results attainable by the study of synopses of characters, all the categories of which are rigidly exclusive and markedly characteristic of the groups they desig-

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nate. By this means, the question of groups having been reduced to a few which are most closely coincident, doubts which cannot be dispelled by the best synopses, are either confirmed or dissipated at once. This subject I think eminently worthy M. Guenée's consideration, and that of all systematists who may succeed him. I would beg him to think upon it in connection with his subsequent works, and at least tell students why he values less a solid and self-satisfying reputation, built on essential and successful impetus given to his favorite branch of study in all parts of the civilized world, than that ephemeral position of being the temporary authority for the little entomological world; and if in addition to synopses of all his groups, under the next most general in value, he would add to his works delineations of the distinctive parts of structure in every genus, instead of colored representations of a few moths, his works would possess an enduring and permanent value, so long as entomology as a study engages the attention of the student of nature.

#### Hemiptera of the North Pacific Exploring Expedition under Com'rs Rodgers and Ringgold.

BY P. R. UHLER.

The Hemipterous insects, brought home by the Expedition, furnish several new and remarkable species, and much praise is due the indefatigable botanist of this Expedition, Mr. Charles Wright, for displaying such zeal in bringing together so many interesting objects. The insect fauna of many of the countries touched at, particularly that of Japan, being almost entirely unknown, renders every addition of species from those localities exceedingly desirable, and it would be matter of deep interest to have an opportunity of examining full series of them.

Considering the importance of the species procured, it is much to be regretted that extensive facilities were not afforded for bringing together a general collection; but, under the existence of contingent circumstances, this was not possible.

The absence of any extensive collection of exotic *Hemiptera* in this country renders it impossible to decide with precision upon a few of the species here included; but should they hereafter be found to have been previously characterized, the proper acknowledgments will be made. As there seems to be no settled opinion in the minds of Entomologists respecting certain groups, particularly with such families as *Halydæ*, *Pentatomidæ*, *Rhaphigastriidæ*, &c., and still further on, with *Mictidæ*, *Nematopidæ*, *Acanthocoridæ*, &c., and having met with a genus (*Pachycephalus*) which violates the characters of the families given, I thought it better to place the included species in two large groups (*Pentatomoidea*, *Coreoidea*), corresponding with the genera *Pentatoma* and *Coreus*, of Fabricius.

#### SCUTELLERIDÆ.

##### CALLIDEA, Burm.

C. *Stollii*, Wolff, Icones Cimicum, 48, tab. 5, fig 45. Hong Kong.

##### EUCORYSSES, Amyot et Serv.

E. *superbus* ♀.—Deep orange; head bluish-black, lateral lobes and the middle one at tip sanguineous, transversely wrinkled, rostrum and antennæ black, pubescent, eyes and ocelli brownish; thorax deep orange, obsoletely punctured, a lunulate, black depression just behind the head densely, coarsely punctured, exterior and anterior edges black, spot upon the disk, one upon each humerus, and a connecting band upon the basal margin also black; behind each anterior angle is an oblong, rounded, shallow impression, blackish; corium black, punctured; wings dark-fuliginous; scutellum finely punctured, with a band at base, an irregular one dilated and projecting medially forward, 1860.]

upon the middle, one interrupted each side, with an anterior acute point behind the middle and a transverse, roundish spot before the apex black; venter violaceous, the middle with a large sanguineous spot, common to the antepenultimate and preceding segments; caudal segment, except the anus, red, segments 1 to 4 with a transverse, lateral carmine spot, the two posterior of which are obsoletely connected with the discal spot, penultimate one at sides broadly carmine through their marginal length, with an impression each side against the stigmata; pectus punctured, violaceous and black, a rounded spot upon the sides of the anterior and posterior segments; legs black, yellowish pubescent.

Length 10—11 lines. Humeral breadth 5—5½. Simoda, Japan.

One specimen differs in having the anterior band of the scutellum interrupted each side of the middle, so as to form three spots.

*PELTOPHORA*, Burm.

*P. picta*, Leach, Zool. Misc. Hong Kong.

*GRAPHOSOMA*, Lap.

*G. rubro-lineatum*, Hope, Cat. Hemipt., p. 12. Hakodadi and Tanosima, Japan.

#### PENTATOMOIDEA.

*BRACHYPELTA*, Amyot et Serv.

*B. elevata*.—Black, shining, broad, ovate; head roughly punctured, finely emarginate, rounded, margins reflexed, lateral lobes meeting in front of the middle one; thorax short, transverse, finely but roughly punctured, sides subparallel, margins trenchant, ciliate, anterior angles rather abruptly rounded, behind the head a deep lunulate depression, bounded posteriorly by a very much elevated prominence, which is rather smoother than the surrounding surface, posterior margin truncate; scutellum finely, rather sparsely punctured, depressed behind the middle to the tip, against the basal corners more elevated and polished; hemelytra finely, closely punctured, corium sinuated, ciliated at the basal margins, membranes testaceo-hyaline; abdomen slightly dilated, convex beneath, margins trenchant, projecting a little beyond the breadth of the corium posteriorly; venter polished; legs black, polished, femoræ ciliate, each with a line of impressed punctures upon the anterior surface, tibiæ very spinous, exterior, spiniform teeth of the anterior ones, subequal.

Length 10—12 millim. Abdominal breadth 5—7. Cape of Good Hope.

This species is very closely related to and possesses many of the characters of *B. tristis*, Fab.; it may be distinguished at a single glance, however, from that common species, by the proportionately shorter and less, laterally, oblique thorax, and by the abdomen being much broader than the thorax.

*ACATALECTUS*, Dallas.

*A. magnus* ♀.—Black, shining, punctured; head rounded, emarginate, with the anterior margin narrowly recurved, lateral lobes meeting by a point of their surface, in front of the middle one, coarsely and deeply rugose-punctate, eyes testaceous, ocelli reddish, antennæ piceous pubescent, terminal joints paler, rostrum pitchy black, second joint thickened; thorax subquadrate, anterior angles a little oblique and rounded, behind the head a slightly elevated, irregularly crescent-formed surface, smooth and impunctate, remaining surface very deeply, coarsely and confluent punctured, a series of very fine punctures against the lateral margins, basal margin subtruncate, smooth, with a very few coarse punctures; scutellum polished, rugosely punctured, impunctured at the apex; corium subopaque, very finely and closely punctured, membrane fuliginous, subopaque, freckled with spots of yellow, beneath scabrescently punctured, venter densely so, its disk polished, impunctured, margins trenchant; legs deep black, polished, anterior and middle femoræ ciliated beneath with a row

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of long slender spines, those upon the posteriors very short, tibiæ densely spinous.

Length 9 lines. Abdominal breadth 5. Hong Kong.

This species must be closely allied to *A. rugosus*, Dallas; but in that species the middle lobe is represented to form the anterior margin of the head, and nothing is said of spots upon the membrane.

ERTHESINA, Spin.

*E. fullo*, Thunb. Nov. Ins. Sp. 42, tab. 2, fig. 57, (1783.) *E. mucoreus* Fab. Ent. Syst. iv. 117, 147, (1794.)

AGONOSCELES, Spin.

*A. nubilus*, Fab. Ent. Syst. iv. 112, 124. Loo-Choo Islands.

POECILOMETIS, Dallas.

*P. mistus* ♀.—Brownish-cinereous; head rounded in front, middle lobe slightly longer than the lateral ones, surface densely punctured with black, antennæ yellow, punctured with black, penultimate joint black in the middle, almost to each end, eyes brownish-glaucous, with a posterior, narrow yellow lobe, prominent, subtruncate posteriorly, rostrum reaching to the abdomen, a longitudinal line, tips of the articulations and apical segment black; thorax densely punctured, a few impunctured yellow spots scattered over the surface, four of which are placed in a transverse row behind the head, anterior angles armed with a very minute denticle, lateral margins smooth, slightly sinuated, humeral angles prominent, triangularly rounded; scutellum confluent punctured, an impunctured yellow spot against each basal corner; sinuated before the tip, tip rounded; hemelytra flecked with brown, densely punctured, slightly tinged with reddish upon the apex of the corium, membrane yellowish-hyaline, the nervures having interrupted brown lines upon them; beneath less closely punctured, upon the pectus several spots of dense green punctures, under surface of the head also punctured in green spots; disk of the venter, with a broad, smooth, impunctured line, surface tinged with reddish, stigmata, and obsolete spots upon the incisural middles of the segments black; legs reddish-yellow, sparsely pubescent, punctured with black, unguiculi with black tips.

Length to tip of wings  $7\frac{1}{2}$  lines. Simoda, Japan, and Hong Kong, China.

PENTATOMA, Lat.

1. *P. fimbriata*, H. Schf. Wanz. Ins. v. 63, tab. 164, fig. 505. Loo-Choo Islands.

2. *P. cruciata*, Fab. Ent. Syst. iv. 119, 153. Hong Kong, China.

3. *P. dissimilis*, Fab. Ent. Syst. iv. 109, 112. Hong Kong, China.

4. *P. humerigera*.—Olivaceous-brown, shining, tinged with æneous; head emarginate, with the central lobe slightly projecting from the emargination, surface closely punctured, eyes prominent, scarcely as wide as the anterior breadth of the thorax, and closely applied against it, ocelli bronzed, antennæ fulvous, second and third joints equal, rostrum reaching the posterior coxæ, testaceous, having a black line above; thorax brassy punctured, humeral projections blackish, salient, subconic, slightly flattened, curved; anterior margin deeply rounded out, behind the head a shallow, transverse, interrupted impression, lateral margins deeply arcuated, with an elongated-oval, impunctured, yellow mark, beginning at the anterior subacute angle; scutellum closely punctured with black, slightly sinuated before the tip, which is bluntly rounded; hemelytra closely punctured, nervures well defined, membrane brownish-fulvous; wings testaceous; tergum black, impunctate, with the lateral margins olivaceous, punctured; beneath polished, olivaceo-testaceous, finely punctured, more deeply and closely so upon the pectus and beneath the humeral projections, a common black spot upon the fourth and fifth segments, and a minute black point against the lateral margin upon the incisures of the segments, stigmata black; legs yellowish-testaceous, pointed with black.

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Length  $3\frac{1}{2}$  lines. Humeral breadth 3. Takanosima, Japan.

This species bears some resemblance in form to *P. scabricorne*, H. Schf.; but differs in the form of the humeral angles.

STRACHIA, Hahn.

*S. ornata*, Linn. Fauna Suecica, 251, 937. Loo-Choo Islands.

A remarkably small variety of this species was obtained at Petropaulovsk, Kamtschatka; it differs from the type in marking, chiefly, in wanting the medial lateral black spot; the specimens are males, being six millims. in length.

EYSARCORIS, Spin.

*E. perlatus*, Fab. Ent. Syst. iv. 125, 177. Simoda and Loo-Choo.

One specimen has the spots of the base of the scutellum very minute, and in another they are entirely wanting.

NEZARA, Amyot et Serv.

*N. torquata*, Fab. Ent. Syst. iv. 108, 107. Loo-Choo.

RHAPHIGASTER, Lap.

*R. disjunctus*.—Grayish-æneous, shining; head bluntly rounded, middle lobe about as long as the lateral ones; surface confluent punctured, tinged with purplish green anteriorly, eyes brownish, ocelli reddish, antennæ piceous pubescent, base of the apical joint yellow, rostrum yellowish, a line above and tip piceous; thorax brassy-greenish, tinged with purplish, confluent punctured, lateral margins regularly oblique, smooth, yellow, humeral angles slightly rounded, a little prominent, margin against the head yellowish; scutellum same color as the thorax, confluent punctured, a little sinuated before the tip, tip and a geminate spot each side at base yellow; corium grayish-yellow, punctured with black, punctures very dense upon the clavus and lateral margins; membrane and wings yellowish-testaceous; tergum black with a violet reflection, segments each with a yellow spot upon the lateral margin; beneath grayish-yellow, coarsely pointed with black, points absent from the disk, which is smooth, yellow, points becoming confluent in spots posteriorly and upon the external edges of the segmental incisures; sternum black, finely carinate in the middle; ventral spine reaching to the medio-coxæ, yellow; legs yellowish, pointed with black, a black band upon the knees, and another at the tips of the tibiæ, tarsi blackish, middle joint paler.

Length 5 lines. Humeral breadth 2 lines. Hong-Kong.

ACANTHOSOMA, Curtis.

*A. haematogaster*, Burm. Handb. ii. 360, 4. Hong-Kong.

TESSERATOMA, Lep. et Serv.

*T. chinensis*, Thunb. Nov. Ins. Spec. 45, tab. 2, f. 59. Hong-Kong.

DICHELOPS, H. Schf.

*D. affinis*.—Elongated-oval, testaceous-yellow, punctured with black, head elongated-triangular, deeply cleft in the middle, points applied, hardly divaricating at the tip, middle lobe about half the length of the external ones, punctured, antennæ reddish, incisures and apical half of the tip joint black, rostrum yellowish, with the extreme tip black; thorax transverse, gradually elevated to the middle, upon which a slightly elevated, arcuated transverse carina, continued to the subacute humeral angles, exists, surface finely wrinkled and punctured, lateral margins lightly arcuated, minutely denticulated; scutellum transversely wrinkled, punctured, and having five longitudinal rows of obsolete granulations; before the tip sinuated, much narrowed; hemelytra very finely punctured with black, membrane testaceous; wings milk-white; venter finely punctured with black, extreme lateral margin a line just outside of the

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stigmata each side, one each side between the stigmata and the disk, and one upon the disk, almost impunctured; legs yellow, finely pubescent, and pointed with black.

Length 7 lines. Humeral breadth  $3\frac{1}{2}$  lines. Simoda, Japan.

#### COREOIDEA.

##### DISCOGASTER, Amyot et Serv.

*D. fuliginosus*.—Dark brown, without lustre; head square, rugous, pubescent; antenniferous tubercles robust, blunt; rostrum thick, reaching between the anterior coxæ, tapering towards the extremity; antennæ densely pubescent, basal joint thickest, constricted at its origin, slightly curved, second a little longer than the third, fourth almost equal to the first, all the joints cylindrical, with the tip of the apical one acute; eyes globular, salient, stemmata about as far from each other as from the eyes; thorax subcrenateform, triangular in front to the base of the head, humeral angles produced into flat, plate-like appendages, angular at the tips, posterior margin obtusely rounded, surface densely covered with short pubescence, coarsely transversely wrinkled, before the posterior margin a transverse, slightly elevated line, which does not reach either margin, edges of the crescent irregularly serrate, antero-lateral margins denticulate; scutellum smooth at base, coarsely wrinkled behind the base to the tip; hemelytra a little paler than the other surface, finely clothed with yellowish pubescence, nervures well defined, membrane subopaque; tergum smooth in the middle, pubescent at the sides; beneath sparsely clothed with golden pubescence, stigmata of the postpectus, bright yellow; legs covered with yellowish pubescence, tip of each femur beneath armed with a stout tooth, between which and the tip are a few smaller ones, posterior femora thickest, slightly curved, all the femoræ subcylindrical.

Length 23 millim. Humeral breadth 9 millim. ♀

This insect, owing to the length of the last joint of the antennæ and the absence of the sternal groove, does not completely agree with the genus as characterized by Amyot; but its general affinities seem to cause it to recur to this genus, where we have accordingly placed it.

##### CAMPTOPUS, Amyot et Serv.

*C. annulatus*.—Fuscous, minutely pubescent; head finely shagrinéd, blackish against the eyes and behind the stemmata, stemmata and eyes reddish-brown, antennæ yellowish, apical two-thirds of the last joint and tips of the others blackish; rostrum with the sides beyond the middle to the tip fulvous; thorax subcampanuliform, posterior angles armed with an acute spine, a minute denticle behind the spine, posterior margin irregularly crenated; surface pubescent, sprinkled with small, black, elevated points; tip of the scutellum yellowish; hemelytra pubescent, nervures very distinct, surface punctured, membrane immaculate, shining; tergum blackish, with a large, rounded, white spot behind the middle, against each incisure a white spot, exteriorly; venter yellowish, sprinkled with irregular dusky marks, a large black discal spot and an interrupted black line upon the middle of the three posterior segments; legs pubescent, spotted and marbled with fuscous and yellow, posterior femoræ particularly dark, armed with five teeth, between the two posterior teeth a few smaller ones, posterior tibiæ slender, curved, yellowish upon the middle, slender, acute spine at tip.

Length 7 lines. ♀. Simoda, Japan.

##### PACHYCEPHALUS, Uhler.

Body robust, elongate-oval; head filled up between the antenniferous tubercles, base of rostrum projecting bluntly; antennæ cylindrical, basal joint thickened, slightly curved, about equal in length to the third, second longest, apical one shortest, fusiform; eyes globular, situated upon a robust promi-1860.]

nence, stemmata placed on the line of the eyes, a little nearer them than each other; rostrum reaching the posterior coxæ, first joint thickest, about equal in length to the second, third and fourth subequal, slender; thorax trapezoid; hemelytra about one-third shorter than the abdomen, a little shorter in the female, membrane with the nervures very irregularly ramose; abdomen thick, margins not recurved, superior caudal segment longest in the male; legs unarmed; posterior thighs not thickened, slightly curved.

*P. opacus*.—Dark brown, without lustre, punctured, pubescent; head with the space between the antenniferous tubercle filled up, antennæ pubescent, brown, with the apical two-thirds of the tip joint yellow, upper surface of the head covered with yellowish pubescence; thorax roughly punctured, a transverse, slightly elevated lobe near each anterior angle, posterior margin with a fine, transverse, impressed line, anterior angles acute, posterior ones rounded, lateral margins sinuated, edge slightly recurved, posterior margin truncate; scutellum and corium of the hemelytra punctured and uniform with the thorax; membrane pale brown, nervules very irregular, tip reaching the end of the fifth segment; tergum and beneath uniformly roughly punctured, pubescent, incisures of the tergum yellowish at the lateral margins; legs dark brown, pubescent, tarsi honey-yellow.

Length 10 millim. Humeral breadth  $2\frac{1}{2}$  millim. ♂ ♀. Takanosima, Japan.

This genus presents an entire anomaly amongst the Coreoid Hemiptera with simple legs; it seems to have most affinity with the Gonoceridæ, but it differs from them in the length of the hemelytra and the irregularity of its nervules; its position in the series, as the system now stands, is very difficult to define.

#### GONOCERUS, H. Schf.

1. *G. bipunctatus*, H. Schf. Wanz. Ins., vi., 9, tab. 183, fig. 566. Takanosima and Loo-Choo.

2. *G. punctipennis*.—Body ovate, tawny-yellow; head punctured with black, space almost filled up between the antenniferous tubercles; tubercles but slightly prominent, middle of the head sulcate; antennæ reddish, pubescent, tips of the first three joints blackish, middle of the apical joint dusky, second joint longest, third a little shorter than the basal one, apical joint about half the length of the second, subfusiform, thickest; two basal joints of the rostrum about equal, apical ones subequal, apex minutely black; a slender black line behind the eyes to the base of the head, eyes brownish, globular, stemmata reddish; thorax trapezoid, gradually narrowed anteriorly to the breadth of the head, sides a little arcuated, margins recurved, paler than the surface, humeral angles bluntly triangular, hardly acute; surface closely punctured with black, behind the head slightly depressed, before the posterior margin a fine, transverse, elevated line interrupted at each end; scutellum and hemelytra minutely and densely punctured, the latter with pale, smooth, elevated costal margins, and upon the disk a small round black dot, membrane pale, semitransparent, nervures longitudinal, numerous, wings same color as membrane, nervures black; abdominal margins lightly recurved, tergum with two small black spots before the tip, and a number of irregular blackish marks near the sides; venter and beneath pale-yellowish, covered with minute, scattered punctures, a double irregular row of black points each side of the venter, within the stigmatal orifices, a few others against the sutures of the discoidal segments, and a single one upon the side of the medio and postpectus; legs minutely pointed with black, finely pubescent.

Length 14 millim. Abdominal breadth ♀ 7 millim. Simoda, Japan.

The female has the antepenultimate segment posteriorly deeply emarginate; at the base of this segment is also an elevated biemarginate process, at which the vulvar opening commences.

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## HOMEOCERIDÆ.

ANACANTHUS, Uhler.

Body elongated, sides parallel; head square, lightly emarginated between the antennæ, and furnished with a feeble carina; behind the emargination, longitudinally impressed; eyes globular; stemmata situated on the posterior line of the eyes, a little nearer them than each other, a slight transverse impression before each; rostrum reaching half way between the anterior pairs of legs, first and second joints nearly equal in length, second thickened, next and the apical one cylindrical, subequal; antennæ cylindrical, slender, as long as the body, basal joint a little more robust than the others, slightly arcuated, second longest, third and apical ones subequal, the latter cylindrical, acute; thorax trapezoid, humeral angles not armed; membrane with the nervures numerous, chiefly longitudinal, tip not extending beyond the abdomen; legs simple, posterior femoræ not thickened, two pairs of hind-femoræ arcuated; abdomen not dilated, sides parallel.

*A. concoloratus*.—Cinnamon-yellow, legs and antennæ deeper, beneath paler, above uniformly, finely punctured, last joint of the antennæ dusky, with a minute black tip; eyes brownish; stemmata reddish; humeral angles simply angulated, an irregular, transverse elevated line before the hind-margin; membrane pale-yellowish, with a brassy tint, a thick nervule running nearly half the length of its posterior margin black; wings whitish, slightly tinged with brassy lustre; origin and basal half of the costal nervure red, remaining part yellow, some of the discal nervures margined with red, the rest brownish or yellow; beneath pale, polished, pectus finely punctured, unguiculi blackish.

Length 16 millim. Humeral breadth  $4\frac{1}{2}$  millim. ♂. Hong-Kong, China.

## LYGÆIDÆ.

LYGÆUS, Fab.

1. *L. equestris*, Linn. Fauna Suecica, 946. Hakodadi, Japan.

2. *L. mundus*, Dallas, Brit. Mus. Cat. Hemip. 542, 32. Cape Good Hope.

3. *L. ornatus*.—Head sanguineous-red, base, under side and slender longitudinal line black, rostrum also black, in the midst of the basal black spot is a minute whitish dot; eyes brownish, stemmata yellowish; antennæ —; thorax red, margins not elevated, a black, each side interrupted, line behind the head, two triangular spots behind near the posterior angles, and two round dots of a deeper black, almost connecting the anterior band with the posterior spots; scutellum black, with a red tip and posterior margin; corium red, whitish against the membrane, a black oval spot running from near the internal angle to the humeral one, where it is reduced almost to a point, another subtriangular one behind the former against the external margin; membrane black, exterior margin and point at the basal angle white; disk of the venter blackish, margins red, stigmata black; each pectoral segment with a large black spot, pulverulent with whitish; a series of four round blacker points each side of the pectus; legs piceous, powdered with whitish.

Length  $9\frac{1}{2}$  millim. ♀. Hong-Kong, China.

## PACHYMERIDÆ.

PACHYMERUS, H. Schf.

*P. albo-marginatus*.—Elongated, black; head black, pubescent, impunctured; rostrum piceous, paler in the middle; thorax trapezoidal, lateral margins broadly elevated, pale testaceous; basal breadth less than the length, surface densely punctured upon the basal half, behind the head and against the lateral margins, middle transverse, impressed line distinct, a slightly elevated, longitudinal line reaching from it to the base, humeral angles obtusely rounded; scutellum black, sparsely punctured, tip and a slightly elevated line against it testaceous; hemelytra coarsely punctured, testaceous, a large black

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spot, covering the clavus, reaching to the subcostal nervure and extending two-thirds of its length, when it becomes blacker, and ramifies broadly against the lateral margin, a much narrower branch also continues against the posterior margin; membrane fuliginous, some of the nervures tinged with testaceous, towards the base; wings pale fuliginous, nervures darker; tergum with two pale spots upon the lateral margin; femoræ black, their basal third and trochanters testaceous, tibiæ light-piceous, black at tip, tarsi dusky at tip.

Length 11 millim. ♀. Takanosima, Japan.

Nothing is said of the antennæ, as they are unfortunately broken off from the only specimen obtained.

A specimen, which I take to be a variety of this species, was captured at the Cape of Good Hope.

It differs from the type in having the posterior thoracic lobe marmorated with testaceous, the hemelytral spot is not so black, spreading more irregularly over the surface, the testaceous color is faintly spread over the margins of the tergum, the femoræ are testaceous for two-thirds of their basal length, the tibia and tarsi are almost entirely testaceous, and the rostrum is tinged with piceous, more or less deep, throughout its entire length. Its length is  $10\frac{1}{2}$  millim. ♀.

It corresponds with what is considered as a not full colored state of many insects of this and other families of Hemiptera, wherein the insect has not lived long enough to attain its complete depth of coloring, or where certain physical contingencies have retarded its attainment to full perfection of color.

#### APHANUS, Dallas.

*A. boniniensis*.—Pitchy-black, finely pubescent; head black, antennæ testaceous, tips of joints black, rostrum testaceous, piceous in front and at the tip, eyes dark brown, stemmata yellowish; thorax subcampanuliform, pubescent, anterior lobe rounded at sides, dark brownish, posterior lobe reddish, with a testaceous line upon the humerus bounded by a black line; corium yellowish-testaceous, margins paler, a spot at the apex, another a little in advance of it, punctulation and a few minute spots black; membrane fuliginous, nervules white; wings white; beneath black, margins of the abdomen and antepectus pale piceous; legs testaceous, a band upon the anterior femora, one upon the middle and posterior femora, and tips of tibiæ blackish.

Length 5 millim. ♀. Bonin Islands.

#### ORTHŒA, Dallas.

Elongated, black, opaque; head clothed with long hairs, first joint of the antennæ with a pale base, remaining joints —; rostrum reaching to the posterior coxæ, slender, curved, its color piceous, paler towards the tip, with a black longitudinal line; eyes brownish, darker upon the middle, stemmata amber-yellow; thorax clothed with long hairs, deep black, opaque, posterior lobe strongly punctured, a pale piceous spot upon the broad, transverse impression, including a slightly elevated, short, longitudinal line; anterior lobe strongly convex; scutellum black, coarsely but sparsely punctured; hemelytra testaceous, clavus, excepting the exterior nervure, vestiges upon the corium, large transverse spot, extending from the apex of the scutellum to the lateral margin and posterior margin, gradually dilating to the tip, black; membrane fuliginous, a number of small spots near the tip, nervules measurably, and small round spot near the apex of the corium, testaceous; disk of the tergum rufescent, lateral margin and two posterior segments blackish, fourth segment with a large, marginal, yellow spot each side; beneath dull black, antepectus punctured, postpectus yellow at its superior angles, minutely corrugated, mediopectus punctured and wrinkled; venter without lustre, a large yellowish spot upon the margin of the fourth segment, and a smaller one upon the fifth; trochanters and coxæ testaceous, anterior femora black, testaceous at base,

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armed with a number of minute teeth, tibiæ all pale piceous, middle femora piceous, paler toward the base.

Length 12 millim. ♀. Hong-Kong, China.

*PELIOSOMA*, Uhler.

Body elongated; head long, triangular, each side, between the antennæ, with a small, curved lamellæ, concave on the exterior side, interrupted at the origin of the rostrum, and not extending back much beyond the antennæ; rostrum reaching but little behind the anterior coxæ, basal and second joints subequal in length, third and fourth also subequal; antennæ ♂ as long as the body, ♀ not quite two-thirds of that length, basal joint longest, clavate at tip, second somewhat longer than the third, fourth shortest, subfusiform; thorax elongated subtrapezoidal, base elevated, lateral margins obtusely and feebly carinated; hemelytra as long as the abdomen, membrane with five longitudinal nervules; legs normal, anterior tibiæ curved.

*P. antennata*.—Tawney, lustrous, punctured with black; head and thorax densely punctured, the latter with a longitudinal, raised, polished, yellow line, but little punctured, lateral obsolete, carina yellow, posterior angles tubercular; anterior lobe convex, a broad transverse depression behind it; antennæ honey-yellow, paler upon the third joint, apices of the first and second joints dusky, last joint entirely so; eyes and ocelli brown; rostrum fulvous, dusky behind the middle to the tip; scutellum with a yellow line at tip and a yellow, short, tubercle-like line each side of base; corium dusky near the internal angle, apex with a small blackish dot, membrane honey-yellow, with white nervules; field of the tergum black, sides yellow, with black dots at the incisural margins; beneath varied with piceous and testaceous, pectus more uniformly pitchy, densely punctured, margins of the venter tawney yellow; legs honey-yellow, pointed with black; tips of tibiæ and tarsal joints blackish.

Length 8 millim. Simoda, Japan.

*OPHTHALMICUS*, Schill.

*O. varius*.—Black; head and legs orange-yellow; antennæ piceous, basal joint and apex of the third, yellowish; eyes light-brown, rostrum honey-yellow; thorax square, broader than long, surface polished, black, coarsely punctured; posterior angles with a subquadrate, small, yellow spot; scutellum black punctured; corium and membrane honey-yellow, the former punctured with black, most thickly so upon the exterior and interior margins; tergum and beneath polished black; pectus punctured.

Length 5 millim ♂. Simoda, Japan.

It belongs to Fieber's second subdivision (a\*\*) and seems to approach his *O. siculus*, more nearly than any other species.

*PYRRHOCORIDÆ*.

*PYRRHOCORIS*, Fallen.

*P. Forsteri*, Fab. Ent. Syst. iv. 164. H. Schf. W. I. viii. tab. 283, f. 872. Cape Good Hope.

*DYSDERCUS*, Serv.

*D. carnifex*, Fab. Ent. Syst. iv. 160. H. Schf. W. I. ii. tab. 66, f. 199. Cape Good Hope.

*D. Schlanbuschii*, Fab. Ent. Syst. iv. 155. Donovan, Ins. China, tab. 20, f. 2. Hong Kong.

*LEPTOCORIS*, Hahn.

*L. haematideus*, Hahn., W. I. tab. i, fig. 3, vol. i. Hong Kong, China, 1860.]

## LARGIDÆ.

LARGUS, Hahn.

*L. cinctus*, H. Schf. W. I. vii. tab. 218, f. 683. California.

## ECTRYCHODIDÆ.

PHYSORHYNCHUS, Serv.

*P. crux*, Thunb. Dissert. Acad. 156. Hahn. W. I. i. tab. 5, f. 20. Cape Good Hope.

## HARPACTORIDÆ.

ARILUS, Burm.

*A. bifidus*, Fab. Ent. Syst. 4, 204. Donovan, Ins. China, pl. 21, f. 5. Hong Kong.

HARPACTOR, Lap.

*H. nodipes*.—Black, polished; head black, pubescent, bilobed, grooved between the ocelli; ocelli whitish; eyes large, black; antennæ black, apical joints piceous, pubescent, basal joint with two whitish rings upon the middle; rostrum robust, black; thorax pubescent, longitudinal impressed line, interrupted upon the middle of the posterior lobe, prothorax each side of the head produced into a subacute tubercle; scutellum without spinous processes; corium pitchy-black, membrane fuliginous, nervures darker; tergum blackish, lateral margins much dilated, crenulated, the incisures and a large postero-lateral spot upon the two last segments, whitish; beneath, black polished, venter sprinkled with numerous round, yellow points, the two posterior segments tinged with pale piceous; the spots of the upper marginal surface obvious beneath; legs black, three knot-like pilose prominences upon, and near the tips of the femora, two yellow bands upon the femora, and one upon the tibiæ; nodulæ much less obvious in the ♂ than in the ♀; yellow femoral bands, also more numerous in the male.

Length 12 millim. Simoda, Japan.

## STENOPODIDÆ.

CANTHESANCUS.

*C. trimaculatus*, Amyot et Serv. Hemipt. 389, pl. 7, fig. 20. Hong Kong.

## GERRIDÆ.

HALOBATES, Esch.

*H. sericeus*, Esch. Entomograp., 164, 79, tab. 2, f. 4. Atlantic Ocean near the Equator.

PTILOMERA, Amyot et Serv.

*P. tigrina*.—♂ Fulvous, polished, beneath silvery sericeous; rostrum with the apical joint and tip of the preceding one black, nasus and spot at the origin of the antenna black, head impressed at the origin of the rostrum, eyes brownish-black; prothorax subquadrate, largely impressed posteriorly, sides of the thorax with a silvery undulating line bounded each side by a black line, and extending from the base of the prothorax to the origin of the posterior legs, sutures black, behind the head three minute spots, behind the prothorax, included in a rounded impression, two larger ones and upon the posterior transverse suture, silvery sericeous; metathorax impressed each side against the anterior transverse suture, and having a slender impressed middle line; abdomen much narrower than the thorax, about equal to it in length, sutures black, particularly at the sides of the segments, sides of the segments slightly sericeous, anal and caudal appendages filiform, acute; two lamellar

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anal processes, emarginate above, each projecting into a subtruncate point inferiorly; legs long, slender, fulvous, posterior pair longest, anterior pair with two slender black lines superiorly; a black spot each side upon the pectus, before the anterior and middle legs; anterior tibia and tarsi pubescent, middle tibia armed with long cilia, posterior tibia —.

Length to tip of abdomen 15 millim., prothorax 2, mesothorax 4 millim. Hong Kong, China.

GERRIS, Fab.

*G. rufo-scutellatus*, Latr. H. Schf. W. I. ix. 69. tab. ccc. fig. 924. Simoda.

PEDIRAPTI.

DIPLONYCHUS, Lap.

*D. rusticus*, Fab.; Donovan, Ins. China, p. 46, pl. 19, fig. 1. Loo Choo.

NEPA, Fab.

*N. rubra*, Linn.; Donovan, Ins. China, p. 47, pl. 19, fig. 2. Hong Kong.

NOTONECTIDÆ.

BOTHRONOTUS, Fieb.

*B. biimpressus*.—Robust, shining, dusky-yellowish testaceous; head narrower than the thorax, with a punctured impression each side upon the front, from both of which a punctured, impressed line extends to a shallower impression, each side, near the base, apical joint of the rostrum piceous; thorax transversely wrinkled, transparent, a transverse brownish band upon the anterior submargin; each side, behind the fossa, depressed; scutellum black; corium with a pitchy stripe upon the interior suture, a spot at base and against the apex, exterior submargin and membrane dusky; basal areole and veins of the latter piceous; embolium and connected edge yellow; wings fuliginous, veins darker; tergum piceous, posterior margins of the segments paler, lateral margins and caudal extremity yellowish, the last clothed with long golden hairs; venter pale piceous, middle carina and margins yellowish; legs testaceous, clothed with golden hairs.

Length 11 millim, breadth of thorax 5 millim. Hong Kong.

Var. a. Pale, luteo testaceous, ventral disk and basal areole of the membrane dusky.

#### Notes on Shells.

BY T. A. CONRAD.

In "Tertiary Fossil Shells of the United States," I characterized a genus of *Carditidæ*, published in 1838, under the name of *CARDITAMERA*, which has generally been referred to the genus *MYTILICARDIA* of Blainville. The two genera differ so much in external form, that they can easily be recognized without reference to the hinge. The former has the general form of an elongated *Arca*, Lam., whilst the latter has an outline somewhat like that of *Modiola*. The genus *CARDITAMERA*, Dr. Gray has since named *LAZARIA*, the reason for the change of name being unknown to me.

In this country the genus *CARDITAMERA*, originated in the Miocene period, which contains three known species, and there is one living, which inhabits the coast of Florida. One is said to inhabit Madagascar, and all the others are American. It does not appear that any species of *MYTILICARDIA*, is American, either recent or fossil. The type of *CARDITAMERA* is *Cardita pectunculus*, Brug. 1860.]

*Synopsis of the Genus Rangia.*

RANGIA, Desmoulins, (1832, Hermannsen).

CLATHRODON, Gray, MSS. Conrad, 1831.

GNATHODON, Gray, 1837.

1. *Rangia cyrenoides*, Desmoulins. (1831, Bronn.)  
*G. cuneatus*, Gray.
2. *R. flexuosa*, Conrad, (Gnathodon,) 1840.  
*G. rostratum*, Petit de la Saussaye, 1853.
3. *R. parvum*, ib. (Gnathodon.)
4. *R. mendica*, Gould, (Gnathodon,) 1851.  
*G. trigonum*, Petit de la Sauss., 1853.

*Fossil Species.*

1. *Rangia clathrodonta*, Conrad, (Mactra.)  
*Gnathodon, Grayi*, ib.
2. *R. Lecontei*, Conrad, (Gnathodon.)
3. *R. minor*, Conrad, (ib.)

## PLEIODON, Conrad.

The discovery of a new species of this African genus in Lake Tanganyika suggests the probability that Pleiodon will prove the predominant form of Unionidæ in tropical Africa, and we may anticipate the discovery of many species by future explorers. It occupies in geographical distribution as important a position as *CASTALIA* and *TRIQUETRA* do in tropical South America. I presume from the peculiar and distinct character of the hinge of *PLEIODON*, that the animal will be found somewhat different in organization from those of other genera of Unionidæ. It will be interesting to learn whether this form is accompanied or not by species of the nearest allied genus *MUTELA*, at present known only to exist in the Nile.

## PARAMYA, Conrad.

I propose the above name as a substitute for *MYALINA*, Conrad, figured and described in "Foss. of Medial Tert. of the U. S." p. 65, pl. 36, fig. 4. A very different genus was designated *MYALINA*, by De Koninck, and has priority.

*Geographical distribution of the Genus Lemopsis Sassi.*

*Recent species.* Red Sea, 1. Cape of Good Hope, 1, 120 fathoms. Singapore, 1. Norway, 1.

*Fossil species.* Eocene of Claiborne, Alab. 7. Texas, 1. English crag. 2. D'Orbigny, in his Prodrômus, names 7 Jurassic species, 3 Cretaceous sp., 17 Miocene, and 1 Subappennine sp. of European formations. In North America I believe no species has been found older than those of the Eocene, and no recent one.

## ADEORBIS, Wood.

This genus occurring recent in England, California and the West Indies, and fossil in the English Miocene, is represented in the Miocene of the United States by 1 species.

*A. lyra*, (*Delphinula lyra*, Con.) see Proceed. Acad. Nat. Sci. vol. 3, p. 20.

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**Descriptions of three new species of Gorgonidæ, in the collection of the Academy.**

BY GEO. H. HORN.

**LOPHOGORGIA.**

*L. clavata*.—Polypary bipinnate. Trunk and branches very much flattened. Branchlets thick, and but slightly compressed, clavate at their extremities. Calices numerous and projecting. Coenenchyme thick. Color reddish-pink.

This species differs from the *L. flammea*, in its more numerous and projecting calices. The branchlets of the latter are much flattened and acuminate, and have an intense red color.

Locality unknown.

*L. aurantiaca*.—Polypary very much subdivided. Trunk but slightly flattened. Branchlets numerous and rounded, arising in pairs from opposite sides of the branches. Calices numerous and slightly elevated. Coenenchyme thin. Color orange, striped with red.

This species is much more subdivided than either of the others, and has its trunk and branches much less flattened. The color of the trunk, deprived of the cortex, is red.

Locality unknown.

**RHIPIDIGORGIA.**

*R. Engelmanni*.—Flabellate, coarsely reticulate. Branches much flattened, from one to two and a half lines wide. Interspaces rounded, occasionally elongated to the extent of one inch. Color ochreous externally, purple or reddish within.

The fronds of this species are higher than wide, (height 9 inches, width 6 inches,) bearing no free branchlets. Calices large and crowded, quadrangular in outline, with no elevation of their edges. Coenenchyme thick, easily crushed.

Locality. Mazatlan. Dr. Engelmann.

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**The Cutting Ant of Texas.**

BY S. B. BUCKLEY.

**MYRMICA (ATTA) TEXANA—"Cutting Ant."**

*Description.*

*Neuter*. Color reddish-brown; head disproportionately large, mandibles large, triangular falcate, serrate, bent downwards in adult, two small, short spines at the back of each lobe of the head; sinus between lobes large; antennæ two, two-jointed, last joint clavate; thorax small, compressed, upper surface armed with six spines, front pair inclining forwards, middle pair erect, smallest, and near front pair, back pair inclining backwards; connecticum nodose, two-jointed; abdomen about half as large as head, oblong, ovate, obtuse; legs two-clawed, a claw or spine near the base of the tibia of the two front legs. Adult  $4\frac{1}{2}$  lines long.

*Female*. Color reddish-brown; head disproportionately small; sinus small between its lobes, rudiments of spines at back of each lobe; antennæ and mandibles as in neuter; thorax large, upper front protruding over the head, compressed, upper surface covered with thick downy hairs; abdomen larger than thorax.

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ovate, obtuse. Length without wings,  $8\frac{1}{2}$  lines. Largest wings 1 inch 1 line in length. Entire length, 1 inch 4 lines.

*Male.* Resembles female, but is a little smaller, with its head and abdomen more acute.

These ants have homes in the ground. A few of their underground dwellings have lately been brought to view, by digging, in order to kill the ants, because they destroy what belongs to the farmer and horticulturist. The extent of these ant galleries and cells, is so great as almost to exceed belief; but several of the excavations made to slay ants are within the incorporated limits of the city of Austin, and have been seen by hundreds of its citizens. The underground rooms of these cutting ants are rounded or oblong cavities, all connected by cylindrical passages, of a diameter varying from one to three or even more inches. Some cells are six inches wide, by nearly as many in height, and others twelve inches high, with a shorter diameter of some six to eighteen inches and the longer diameter three feet, and sometimes even more. These chambers are often one above the other, and again side by side; but on the whole, they do not seem to be placed with any apparent order, being scattered underground at various distances apart, from two inches to as many feet. In a clay soil they appear to be coated or varnished with a very thin, dirty brown, waxlike secretion. In sandy ground, to keep the walls firm, they are plastered with a black limestone earth, abounding in portions of the prairies and river bottoms. This often has to be carried a distance of many rods; and then the amount of their labor and its results are truly wonderful, showing their knowledge to be equal to that of any race of ants known. Their lowest chambers are generally ten and twelve feet deep, while the upper cells are rarely nearer the surface than eighteen inches. I extended a tape line down to the bottom of one, and found it seventeen feet deep; at one of their largest dens, a room was found sixteen feet beneath the surface, and several others were at near the same depth. At that place, the ground is dug out from twelve to sixteen feet deep, extending over an area having an average diameter of twenty-five feet, all of which was filled with ant cells. Several large avenues (4—5 in. diam.) entered the bottom of this large den. On striking an avenue, some ants were seen to enter it followed by others, loaded with barley, all coming from that underground passage. Where they got the barley was the question, which was finally solved by going to a stable more than three hundred feet distant; from which ants were seen to descend, each with his barley grain, and enter a hole in the ground near the base of the stable, which was the only place in the vicinity where there was any barley. Another avenue on the other side, is said to come out at the bank of a stream, between two and three hundred feet distant, where are some elm trees, from which the ants obtained bits of leaves, and carried them through said avenue into the base of the den. That they have extensive underground passages, there is not the least doubt. A gentleman recently told me of an instance where they dug under or tunneled a stream to get into a garden. There was a large ant den across the stream, and for a long time the garden was safe from their depredations, but finally the cutting ants were seen there, carrying bits of leaves into a small hole in the ground. There was no ant den in the vicinity, except the one across the creek, and as there were no dirt heaps on the surface of the ground in the garden, as there always are above an ant den, the inference was, that those cutting ants seen in the garden belonged to the tribe across the river; if so, it is probable that some of their wise ones, when on the trees in the vicinity of their abode, beheld the fine things in the garden, to obtain which they advised tunneling the stream.

The question will naturally arise, how is it possible for them to direct their course in digging those long underground passages so as to reach the surface at the wished for spot? Let those who ask, also answer; I only know that such long avenues exist, having thrust a long stick into one at the bottom of one of their dens, and I have also seen the outer openings of many of them on

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the banks of rivers and streams, whose water gives the ants drink, and where food can easily be had from the trees and bushes usually found growing on the banks of streams in all prairie lands.

At the large ant den in Austin, before spoken of, millions of working ants, and bushels of eggs and larvæ, with great numbers of males and females, were destroyed. As soon as a large apartment containing the eggs, larvæ and winged ants was found, a fire was kindled forthwith among them, for which purpose, light, combustible stuff was kept near. The eggs were of different sizes, belonging to opposite sexes, also showing, probably, that they grow, and were in a greater or less advanced stage of development. The workers at first are very small, scarcely a line in length. The eggs mixed with minute young ants, were in a soft, grey spongy substance, apparently leaves, finely triturated and mixed with an animal secretion.

It is said they sometimes abandon their caves, when from long residence the chambers become filthy, or perhaps they are injured by heavy rains, or it may be that the ants desire a better situation for provender. Whatever may be the cause, they have been known to emigrate en masse, and after making new excavations, and dwelling in them a few years, to return again to their old first residence. It is probable that they have a division of labor, some nurse the young, and others provide food. In one instance I saw one cut off a segment of an elm leaf, and another seized it as soon as cut, and carried it away, but generally I have noticed that he who cuts also carries. When cutting, one mandible is inserted, and carried slowly along; the head swaying to and fro, and the other mandible moving its sharp point, apparently breaking the surface to lessen the thickness to be cut by the other. The ant often stands on the part of the leaf which he is cutting off, but he is careful to remove to a firm place before it is finally severed, which done, he seizes one edge of it with his mandibles, and with a rapid movement throws it on his head and thorax, so that its lower edge rests between the lobes of the head and the spines of the thorax, and the upper edge is aloft. Away he goes, and joins the busy throng in the main path, which looks as if the ants had a gala day, and were marching with banners flying. Lately, on the banks of the Colorado river, near Austin, I saw multitudes of ants in their path, going up hill with fragments of leaves, and hack berries, (celtis,) some entire, and others with a small portion cut off, to render them lighter and suitable to be carried by the smaller ants. The place at which they entered the ground was about six feet from the top of the bank. This pathway was steep, and even perpendicular, for a distance of five or six inches, at a place about one foot below their doorway. The labor was severe to carry the berries up this path, but the struggle was great to get them to the top of the perpendicular spot. In performing this feat the berry carriers met with many falls, often rolling one and two feet down the hill but always sticking fast to their burdens, and trying again until they finally triumphed. One fell when near the top, and as he came up again, and was about to succeed, I touched his load with the point of a knife, and down it and ant went. His third attempt was put to the same test, but even then, he did not get angry, or show the least impatience, but cheerfully took his berry, and went up and in at the door of the long avenue.

A lady lately showed me a safe where she kept sugar and sweetmeats, which drew swarms of small ants. The legs of the safe were then placed in vessels of water, and the ants did not succeed in reaching the sweets during several days, but finally many of them were found in the sugar. After some little study to discover how they got there, they were seen to drop on the safe from the roof at the distance of about two feet above. These, however, were not the cutting ants, and I only mention their feats because they are similar to those related of ants by an East India officer. A gentleman told me that he suspended sugar by a string from a rafter in his house, to keep it from ants, but they went up and came down the string. They also were not the cutting ants, which rarely, if ever, enter houses.

1860.]

The cutting ants often assist each other. I saw one which fell with a hack berry, at the vertical place before named. The berry got loose from him, and instead of shouldering it again, he tried to drag it along, but was unable to pull it up the perpendicular. Many passed him and gave the cold shoulder; finally a kind ant came and pushed. By shoving and pulling the two succeeded in getting the berry to the top, when the assister immediately left, and started down the hill. They live on both animal and vegetable food. I have seen them carrying both worms and bugs. Whole beetles and numerous elytra have been found in their cells, but nothing indicating that they lay up large stores of food, like some of the East India ants, which have been seen to fetch their stores of corn to the surface to dry after heavy rains. The common tumble bug, (*Canthon lavis*), in rolling his ball, sometimes heedlessly backs up over a nest of the cutting ants, and falls a victim, being overcome by numbers. Once I saw a very large one roll his ball into their midst, when he was fiercely attacked by the multitude. At first he stuck his nose in the sand, or rather between his forelegs, but the bites behind were so severe that he roused and flew in circles, finally alighting near me, which was no sooner done than an ant who had accompanied the flight, jumped to the ground, for a moment looked bewildered, then ran for home, it may be, to tell of his wonderful ride on the big bug.

The damage which these ants do, is great, by destroying trees and vegetables. I know of one family who are about to leave a beautiful situation near a fine spring, because the cutting ants have nearly killed their fruit trees and ornamental shrubbery, especially roses, for which they have a peculiar fondness. They have been known to strip a fruit tree of its leaves in a single night. In some sections these ants prevent the cultivation of fruit. Thousands of dollars have been uselessly spent in attempts to kill them by blowing noxious gasses into their dens, or by placing poisons at the doorways of their dwellings. A knowledge of the habits and abodes of these insects show the futility of such attempts; the fact is, but few of these can be reached by gas, let the bellows blow ever so hard, nor can many be killed by poison, even if the most deadly be placed within their doorways, for as soon as they discover harm, they form a new entrance. The only effectual method of destroying them is to dig, and kill the females and young, when the neuters will soon perish. This is so expensive that it will only be resorted to near a garden or dwelling, and as the cutting ants are scattered through western and central Texas, they probably never will be exterminated by man.

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#### Contributions to the Carboniferous Flora of the United States.

BY HORATIO C. WOOD, JR.

##### CALAMITES Suckow.

*C. bicostatus* nobis.—Stem slender, bicostate, with distant articulations; ribs undulate, double, a very narrow, alternating with a broader one; tubercles obsolete. The distant articulations and the double, undulate ribs characterize this as a very distinct species.

##### ANNULARIA Sternb.

*A. dubia* nobis.

Syn. *Bechera dubia* Stern. Vers. vol. i. p. 30, t. 51 fig. 3, 1821. *Annularia minuta* Brongt. Prod. p. 155.

*A. stellata* nobis.

Syn. *Casuarinites stellatus* Schloth. Flora der Vorwelt, t. i. fig. 4, 1804, ejusdem, Nacht. Petref. 1822. *Bornia stellata* Sternb. Vers. i. p. 28. *Annularia longifolia* Brongt. Prod. 1828. *Asterophyllites equisetiformis* Lind. et Hutton, Foss. Flora, vol. ii. t. 124.

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## ASTEROPHYLLITES.

*A. reflexa* nobis.

Syn. *Annularia reflexa* Sternb. Vers. i. p. 31, t. 19, fig. 5. *Asterophyllites Brardii*, Brongt. Prod.

If this is a distinct species (which is doubtful) it must retain the specific name of the first author.

## SIGILLARIA Brongt.

Stem not articulate, corticate, costate, smooth or striate; ribs of various widths, having furrows interposed between them; cicatrices discoid, disposed spirally upon the ribs, their longitudinal diameter exceeding the transverse; vascular scars varying in number, mostly linear.

The great fossil botanist, Brongniart, united the three genera of Sternberg, (*Rhytidolepis*, *Favularia* and *Syringodendron*,) with the title of *Sigillaria*. More modern authors have, however, re-separated them, retaining Brongniart's name for the first division of Sternb.

Among recent writers, Messrs. Lindley and Hutton, have acknowledged the genus *Favularia*, but Unger, Lesquereux and others do not. We have not seen sufficient specimens of this genus to justify us in offering an opinion.

*Rhytidolepis*, has, we believe, the right of priority over *Sigillaria*, but as the latter is now universally employed, it would cause too much confusion to revert to the original title.

M. Brongniart says, (see top of page 393, Veg. Foss.) "this genus is characterized by the longitudinal diameter of scars at least equalling the transverse, and that ordinarily it is much greater." A very few of the species which we would recognise as true *Sigillaria*, depart slightly from this rule, but it is impossible to characterize a genus in fossil botany, some of whose forms will not approach those of another division, for the simple reason, that any classification, however ingenious, must necessarily be purely artificial.

According to the oldest classification, all fossil plants were referred to the two genera, *Filicites* and *Phytolithus*. The present system has arisen by splitting off, as it were, section after section from these.

The classification of vegetable reliquæ may thus continue to advance, and it is with the hope it may prove a step in the right direction, that we propose a partial revision of the genus *Sigillaria*.

*S. perplexa*, n. sp.—Stem costate, costa varying in their width; bark thin; cicatrices quadrangular, conjoined by their raised confluent borders; vascular scars obsolete.

We place this very remarkable fossil in this group until better specimens can be obtained for further study. Though the vascular scars are not preserved, yet we cannot say they have never existed. When the bark is stripped from the stem, a raised border is seen to underlie the margin of external scar. Locality and position unknown. Cabinet of the Academy.

*S. solanus*, n. sp.—Stem costate; ribs strongly convex, striate, and with a striate groove in the middle; cicatrices placed in this groove, small, distant subdiscoidal, often elongated with their base rounded and apex somewhat truncate; vascular scars three, those on the sides linear, arcuate.

In our specimen the distance between the scars is about five times their length. The depression or channel is slightly widened at their position, and between them a band, equalling them in width, is finely chased by very numerous minute striæ. Locality, Shæver's Drift, East Norwegia. Position unknown. Collection of the Academy.

## ASOLANUS nobis.

Stem not costate, striate; striæ straight or curved, regularly or irregularly disposed; cicatrices discoid, single, their transverse exceeding the longitudinal diameter; vascular scars varying in number, mostly linear.

1860.]

We think the absence of ribs is sufficient to found a generic distinction on, but this genus is also separated from *Sigillaria*, by the excess of the transverse over the longitudinal diameter of the leaf-scar.

*A. campototania*, n. sp.—Stem striate; striæ disposed in two series; in the one, contiguous, numerous, descending towards the right; in the other, few, and ascending towards the right; cicatrices sub-triangular rounded at apex, acuminate at the base; vascular scars almost obsolete. Locality and position unknown. Cabinet of the Academy.

*A. ornithicnoides*, n. sp.—Stem longitudinally striate, vascular cicatrices three, linear, the middle much the longest.

This is undoubtedly decorticated and the markings are often obscured by adherent flakes of coal; but the peculiar disposition of the scars render this species very distinct. The middle impression projecting in front and behind gives the scars an appearance resembling that of bird tracks, which is often heightened by short curved striæ projecting from the side marks. Near the top and bottom of the specimen are two large oval scars, which, perhaps, mark the former position of branches; if so, this further separates this genus from *Sigillaria*, which Brongt. says do not branch. Locality, Milnes Mine, St. Clair. Position unknown. Collection of the Academy.

#### SYRINGODENDRON Sternb.

Stem tree-like furrowed, costate; cicatrices either single or double; vascular scars for the most part wanting, but sometimes represented by a single dot.

This is a very poorly defined genus, and we think that at some future date it will be broken up into several. We have seen no vascular scar in any specimen, and think that species possessing such will be found to have other characters in common sufficient to warrant their erection into a distinct genus.

For the present we follow Sternberg in dividing into two sub-genera—*a*, those with a single scar; *b*, those with a double scar.

*S. magnifica*, n. sp.—Stem not costate; striate (when decorticated), bark very seldom preserved; cicatrices double, oval, arranged in spiral, undulating rows ten to fifteen lines apart.

The distance between the pairs of scars is very variable, but never, in our specimens, exceeding twice their length. The two scars are often fused into one, with a broad disk of coal adherent. This species is seldom found with the bark remaining, we have seen but a single very poor specimen of it in that state. Owing to the absence of ribs, we think that it should not be classed in this genus. But desiring to avoid creating genera unnecessarily, we place it provisionally here. If other similar species should be found, constituting a distinct group, we would propose the name of *Diploaxis*.

#### SOLENOULA nobis.

Stem ribbed, costæ narrow, convex; furrows equalling in width the ribs; cicatrices round, situated in the furrows between the ribs; vascular scars unknown.

We have created this genus to receive a very curious fossil from Schuylkill Co., Pa. Although the specimen is large and very handsome, yet the cortex is not sufficiently preserved, for us to note the form or even existence of vascular scars.

*S. psilophloeus*, n. sp.—Stem costate, costa convex, furrows and ribs striate, bark thin, cicatrices convex, situate in middle of the furrows. Locality, Milnes Mine, St. Clair. Position, body of Mammoth Vein. Collection of the Academy.

#### LEPIDODENDRON Sternb.

*L. dubium* n. sp.—Cicatrices lanceolate, approximate, strongly convex,  
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with apex and base acuminate; margin sunken, flexuous, very narrow; vascular scars lanceolate.

In our specimen the vascular scars are almost obsolete and have a slight bulbous enlargement in the centre. Where the bark remains, the crest of the scar alone reaches the surface. We place this plant, with some hesitation, among the *Lepidodendra*. It is, however, allied to *L. rimosum* and *L. undulatum*, and with them ought perhaps to be erected into a separate genus. If this should be found advisable, we would propose the name *Acrostigma*. Locality and position unknown. Collection of the Academy.

*L. ingens* n. sp.—Cicatrices sub-rhomboidal, with apex and base acuminate, and base curved; margin distinct, furrowed, regularly flexuous; vascular scar sub-triangular, rounded at its apex, with the angles acute; tubercles distinct obovate; middle line almost obsolete, its situation marked by a shallow groove.

This large species, somewhat resembles *L. giganteum* Lesq. from which, however, the outline and disposition of leaf-scars separate it.

*L. mekiston*, n. sp.—Cicatrices, elongate with both apex and base acuminate and the base curved; margin raised, regularly flexuous; vascular scars sub-rhomboidal, with acute angles and marked with two or three dots; appendices distinct, very long, tubercles obovate; medial line deeply furrowed, transversely rugose.

The internal markings, of cicatriculi as well as the tubercles, are very often badly preserved. The general form of main scar resembles *L. Lindleyanum* Ung., whilst the raised border and form of vascular scars ally the plant to *L. aculeatum* Sternb. The more elongated cicatrix and the acute angles of the cicatriculi, separate it from the latter species. It also differs in the situation of tubercles and length of appendices. Locality and position unknown. Cabinet of the Academy.

*L. Oweni*, n. sp.—Cicatrices rhomboidal with somewhat curved base and apex; margin distinct, flexuous; vascular scars rhomboidal, placed near the apex of the cicatrix; appendices parallel to the margin; medial line well marked, flexuous.

Syn. *L. aculeatum* Sternb. n. sp.—Owen Geological Survey of Wisconsin, Iowa, &c., vol. ii. pl. vi. figs. 1, 3. That the impressions there figured are not *L. aculeatum* Sternb. we think is shown by the following considerations: 1st. The shape and relative position of the leaf-scars in the two are quite different. 2d. The vascular scars differ in outline and in Sternb.'s species they are marked with three dots which are wanting in Owen's. 3d. Tubercles are present in *L. aculeatum* Sternb. but not in Owen's figures. Finally the margins of the cicatrices differ.

The outline of our specimens differ somewhat from those figured in the Report, but we think that the species are identical. Locality, unknown. Position, Sandstone below the coal? Cabinet of the Academy.

*L. dikrocheilus*, n. sp.—Cicatrices sub-elliptical with apex and base acuminate and the base curved; margin raised, broad, regularly flexuous, vascular scars sub-rhomboidal, with apex and base rounded and angles at the sides very acute, marked with three dots; medial line almost obsolete, slightly rugose.

The margin of this species so bifurcates, that on the right side it receives an offset from the same side of the neighboring scar; thus making it nearly twice as wide on the right hand side below, and on the left, above. Locality, Broad Top Coal Region. Position, Roof of Cook's (upper) Seam. Private collection.

*L. venustum*, n. sp.—Cicatrices rhomboidal, with their base truncate; margin narrow, flexuous; vascular scar rhomboidal, placed above the middle 1860.]

of leaf-scar; tubercles obovate; appendices well marked, flexuous; middle line distinct, transversely rugose.

The left tubercle is obsolete, and when present is placed lower than the right; the middle line is sometimes flexuous. Locality and position unknown. Cabinet of the Academy.

*L. drepanaspis*, n. sp.—Cicatrices rhomboidal with rounded angles; margin flexuous; vascular scar triangular, raised, placed in apex of leaf-scar, bounded below by a crescentic slope, on which are the tubercles; appendices parallel to the margin; medial line transversely rugose.

This species somewhat resembles *L. clypeatum* Lesq., but is very different when more closely examined. Locality and position unknown. Cabinet of the Academy.

*L. Lesquereuxi*, n. sp.—Cicatrices sub-rhomboidal, elongated, with the apex and base acuminate, vascular scars curved, sub-rhomboidal, their apex rounded and other angles acute, marked with two or three (sometimes obsolete, sometimes confluent) dots; appendices distinct; medial line very strongly marked, transversely rugose.

It is with great pleasure that we dedicate this handsome species to Prof. Lesquereux, to whom every American Geologist is indebted for time and toil spent in elucidating the ancient Flora of this continent. This plant, besides the above characters, has also a crescentic scar, situated in the apex of leaf-scar and marked with two, often obsolete, dots. Locality unknown. Position, Sandstone below the Coal? Cabinet of the Academy.

*L. Borda*, n. sp.—Cicatrices rhomboidal, elongate, with apex and base acuminate and curved; margin distinct; vascular scars placed near the apex of cicatrix, trapezoidal, marked with two (often obsolete) dots; appendices well marked; tubercles obsolete; medial line distinct, transversely rugose.

This species is allied to *L. elegans* Brong., but is separated from it by the scars being more elongated and the consecutive ones communicating, as well as by the difference in the proportion of the length to the breadth of the cicatriculi and the much greater rugosity of medial line. Two magnificent specimens were presented to the Academy by Mr. Borda, the largest measuring 3 feet 7 inches by 13 inches. Locality and position, Top slates of Back Vein, south side of Mine Hill, in the Black Heath Colliery.

#### LEPIDOPHLOGOS Sternb.

*M. Unger* (Gen. et Spec. Plan. Fossil) marks this as a doubtful genus, but we think it is quite a distinct one.

*L. ichthyolepis*, n. sp.—Stem large; cortex thin; cicatrices approximate, raised, triangular, furnished with an appendix on each side and one in the middle; vascular scars not preserved. Locality, Roof of Perseverance Tunnel, Dauphin Co., Pa. Cabinet of the Academy.

Mr. Lesquereux, in his "Catalogue of American Coal Plants," gives *L. crassicaule*, as a species of Brongt.; we are unable to find it in the works of that author, neither is it in *Unger* (op. cit.) As Prof. Lesquereux does not describe it we are at a loss as to its nature.

#### LEPIDOSTROBUS Brong.

*L. stachyoides*, n. sp.—Catkin small, about two and a half lines in breadth and an inch in length; sporanges rhomboidal with flexuous margins, arranged in a single row on each side of the slender axis.

In the specimen a leaf of *Lepidodendron* has such relations to the fruit as to appear at first sight to have been connected with it, but closer examination shows this not to have been the case.

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Catalogue of the Colubridæ in the Museum of the Academy of Natural Sciences  
of Philadelphia, with notes and descriptions of new species. Part 2.

BY E. D. COPE.

*CORONELLINÆ.*

TOLUCA Kennicott. Type *T. lineata*.

U. S. and Mex. Boundary Survey, ii. pt. 2, Reptiles, p. 23, 1859.

Toluca differs from *Amblymetopon Gthr.* in possessing two pairs of frontal plates instead of one, and the nasal and first upper labial are not confluent. *Gyalopion nobis* has two pairs of frontals, but the rostral is recurved and acute, and the first labial is confluent with the nasal. The contact of the post-frontals, the want of anterior prolongation of the vertical, the concavity of the rostral, and presence of anterior frontals, distinguish the latter from *Amblymetopon*. In these genera the teeth are smooth, of equal lengths and a little stouter posteriorly. In *Arrhyton\* Gthr.* (Cat. Brit. Mus. p. 244) the posterior upper maxillary is longer, and separated from the anterior by an interspace, (diacranterian.) These genera possess a strong resemblance to the Calamarian type of form—where some of them have been placed by authors—but we believe them to be more nearly allied to the *Stenorhina*, *Rhinostoma* and *Cemophora*, which are not to be separated from the Coronelliiform genera *Simotes*, *Lampropeltis*, etc. Indeed, comparison with such typical Calamarian forms as *Calamaria*, *Aspidura*, *Rhabdosoma*, *Carphophiops*, etc., shows a less complete want of distinction of head and body, a less degree of rigidity of the latter, and a greater resemblance to the higher types in the forms of the superciliary and labial plates. We do not think their small size at all conclusive as to their pertinence to the Calamariinæ, though an opposite opinion might be held by such herpetologists as would place the Old World "*Ablabes*," the *Diadophis* and *Taniophis* of the New in that group.

Allied to Toluca and *Cemophora nobis*, is a genus inhabiting the southwestern regions of the United States, called *Lamprosoma* by Dr. Hallowell, (Proceed. Acad. N. S. viii. p. 311.) As this name was previously employed by Kirby for a genus of Coleoptera, we propose replacing it here by *CHIONACTIS*, given in allusion to the refulgent whiteness of the scales. The typical and only well-ascertained species is *Rhinostoma occipitale Hallow.*, (Proc. Acad. vii. 1854, p. 95.) This serpent has been erroneously stated by Dr. Günther, P. Z. S. 1858, p. 387, to be a native of West Africa. The muzzle is more depressed than in Toluca, and there is a loreal plate. The equal teeth, single nasal and more depressed head and snout, separate it from *Cemophora*.

83. *T. lineata*, Kenn. l. c. U. S. Pac. R. R. Rept. ix. Reptiles, fig. 35, pl. 8.  
One sp. Toluca Valley, Mexico. Smithsonian Inst.

*PARIASPIIS nobis.* Type *P. plumbeatra*.

Body cylindrical; tail one-eighth of total length. Head scarcely distinct, broad and swollen at the temples, in front very short and depressed. Superior maxillary bone short, its teeth gradually increasing in length posteriorly, none grooved. Pupil round. Top of head covered with the ordinary nine plates, the frontals relatively small, occipitals large. Two nasals, the nostril in the

\* *Arrhyton tæniatum Gthr.* l. c.

The adult of this species measures 16 in. 10 l. in length; the tail 3 in. 7 lines. The color of the lower surface is brownish yellow, and extends upon the third row of scales. Above dark brown, with three indistinct longitudinal lines, as in Günther's description. These notes are taken from a specimen belonging to the Museum at Cambridge, Mass.

anterior, which is very small. No loreal. Preocular one, post-oculars two. Sixth upper labial touching the occipital, which latter is separated from the posterior labials by a single plate. Anal and urosteges entire. Scales smooth.

84. *P. plumbeatra nobis*.—Seven superior labials, eye over third and fourth; the first as large as the postnasal, the last three very large. Preocular small. Rostral small, rather prominent. Vertical presenting an obtuse angle in front, its lateral borders parallel and equal in length to the latero-posterior. Occipitals elongate acute, their divaricating tips separated by a small plate. Exteriorly they are bordered by one temporal and the sixth upper labial. Inferior labials seven. Geniæ two pair, the anterior broader in front, and one-third longer than the posterior. Scales in fifteen longitudinal rows, very smooth. Gastrosteges 140, an anal, urosteges 44. Total length 16 in. 8 lines; tail 2 in. 9 l.

Color above a uniform blackish lead color, paler on the head. Chin and belly yellowish, the inferior labials and gastrosteges tipped with the color of the back, the latter posteriorly spotted with the same. Under surface of tail grey.

One specimen of this interesting serpent is in the Museum of the Academy, presented by Mr. E. T. Cresson, a gentleman to whom we are also indebted for fine specimens of *Boodon virgatum*, *Dryophis Kirtlandii*, *Boiga pulverulenta*, etc. The *Pariaspis* is a native of Liberia, in the same zoological district with the *Holuropholis*, *Dipsadoboa*, *Brachycranion*, etc., which it represents in this group.

STENORHINA Dum. & Bibr. Type *S. ventralis*.

*Erpetologie Generale*, vii. p. 865, 1853.

85. *S. Kennicottiana nobis*.—Form stout, thick, the head not distinct. Muzzle acute. Number of rows of scales and head shields as in *S. ventralis*, except that there are eight inferior labials instead of seven, the fourth being the largest instead of the third. The anterior genæ plates are more elongate, the length being twice the breadth, and the posterior are more produced, and are separated by a narrow intercalary shield. The postnasal is very large, and is joined to the preocular by a suture half the length of the latter. Tail one-fifth of the total length. Gastrosteges 155; one divided anal; urosteges 39 pair. Total length 22 in. 3 l.; tail 4 in. 5 l.

*Coloration*. Above brown, the body crossed by thirty-six deep brown or black bands. These are irregular and very narrow, not wholly involving any scale which they cross. On the flanks they are interrupted and irregular. Chin, belly and under surface of the tail yellow, with an irregular medial line formed by adjacent spots near their extremities. Superior labials yellow, the sixth and seventh bordered above with black. Top of the head uniform brown. One sp.

Isthmus of Panama.

Drs. Gallaer and LeConte.

This species is dedicated to Mr. Robert Kennicott of Washington, a gentleman possessing a knowledge of North American Serpents not excelled by any other naturalist.

86. *S.* ?

We have before us two specimens of the young of what is probably an undescribed species of *Stenorhina*. Their immature age is indicated by the division of several of the gastrosteges upon the umbilical region. In both specimens the tail is only one-eighth of the total length, in the *ventralis* a little more than one-fifth. The scales in the latter are relatively larger, and the vertical plate a little broader. In a specimen of the former, from Veragua, the gastrosteges number 165, urosteges 35; in the second, collected by Dr. Sartorius in the hills west of Vera Cruz, and in the possession of the Smithsonian Institute, they are 155×32. In the *ventralis* the *Erp. Gen.* gives 149×44. The

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color of our specimens is light brown, crossed by numerous bands or elongated spots of deep brown bordered with paler. Sides and belly spotted with the same.

The specimen of *S. ventralis* sent to the Smithsonian Institution by Dr. Sartorius corresponds with the description in the *Erpetologie Generale* in nearly every respect. The color is, however, a very deep slate above, so that the transverse spots are scarcely visible. The gastrosteges are much clouded with slate, and the longitudinal markings are also indistinct. Chin and lower labial plates tinged with bright yellow. There is no specimen of this species in the Academy Museum.

87. *S. quinquelineata nobis*. *Microphis quinquelineatus*, Hallow. Proc. Acad. Nat. Sci. 1854, p. 97.

Two specimens.

Honduras.

Dr. S. W. Woodhouse.

This is the species figured in the *Erp. Generale*, plate 70, as *Stenorhina Freminvillei*. In that figure the loreal plate is distinctly and correctly represented, though the description of that species and diagnosis of the genus would lead one to infer its absence. Is it not possible that the specimen figured by the learned herpetologists may belong to a different species from that which they regard as typical of the *Freminvillei*?

RHINOSTOMA\* Fitz. Type *R. nasuum*.

Neue Classification, 1826, p. 56. Dum. & Bibr. vii. p. 992.

88. *R. nasuum Wagl.*

One sp.

Surinam.

Dr. Hering

89. *R. Guntheri nobis*. Head depressed, rather wider than the neck. Posterior angle of the rostral plate a right-angle. Anterior frontals forming a short suture with each other; posterior frontals forming no suture, their tips only in contact, so that their posterior borders are diagonally continuous with the posterior borders of the anterior frontals. Vertical plate presenting a right angle anteriorly; its superciliary border shortest of all. Occipitals shorter than vertical, each bounded by one large and five small temporals.

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\**GYALOPION nobis*. Form stout; tail one-eighth of total length. Head slightly distinct, large, depressed. Rostral plate acute; its anterior border elevated; its upper surface concave. It is produced backwards, separating the prefrontals, not reaching the vertical. Frontals, two pair. Nasal confounded with the first labial, a groove from the nostril to the suture of the second labial. No loreal, its place supplied by the post frontal. One pre-two postoculars. Scales smooth; anal and subcaudal scutellæ divided. Teeth small, of equal lengths. Pupil round.

*P. canum nobis*. Prefrontals triangular, not larger than preoculars. Postoculars of equal size. Anterior border of vertical not angulated. Occipitals as broad as long, truncate posteriorly. Superior labials seven, eye over third and fourth. Inferior labials seven, fourth largest. Geniæ one pair, very short. Scales in seventeen longitudinal rows, nearly square. Gastrosteges 130; one anal; urosteges 28. Total length 7 in. 6 lin.; tail 11 lin.

*Coloration*. Above brownish grey, crossed by thirty-one irregular transverse brown bands. These are from one to three scales wide on the back, and extend to the gastrosteges. Anteriorly they exhibit a tendency to divide into a dorsal and two lateral series of spots. Eight transverse spots on the tail. First spot on the neck large, produced medially to the occipitals. A brown band extends from one angle of the mouth to the other across the occipitals, involving the tip of the vertical. Another brown band commences upon the upper borders of the lower labial shields, passes through the eye, and crosses the anterior parts of superciliaries and vertical, and posterior parts of postfrontals and rostral. Dirty yellowish beneath, and upon the first row of scales. One specimen (No. 4675,) in the National Museum, Washington, discovered near Ft. Buchanan, Arizona, by Dr. Irwin. It is an extraordinary serpent, resembling, at first sight, a diminutive *Heterodon*.

1860.]

Loreal acute posteriorly; preoculars two, the inferior very small. Postoculars three, nearly equal in size. Upper labials eight, fourth and fifth entering the orbit; last as small as the second. Inferior labials eight; one pair of geneials. Scales in nineteen rows. Gastroteges 182. One entire anal, 67 urosteges. Total length 21 inches, 2 lines. Tail 5 inches.

The upper surface of the head and body are of a dark brown. The upper labials, chin, belly, two inferior rows of scales and the tips of many of the others, dirty white.

One specimen brought from the interior of Venezuela by Capt. Jas. Wilson. It is called by the natives "Coralilla."

We have named this species in honor of Dr. Albert Günther, the celebrated Herpetologist of London, who has done so much toward effecting a natural arrangement of the Colubridæ.

*CEMOPHORA nobis.* Type *C. coccinea*.

Form rather slender; tail one-seventh of total length. Head scarcely distinct, very convex, elongate, acute. Plates of the head broad, normal as to number. Rostril very prominent, obtusely trihedral, produced slightly between the prefrontals. Nasals two—sometimes united,—a loreal, one pre-two postoculars. Scales smooth; anal scutella entire, urosteges divided. Pupil round. One or two posterior maxillary teeth longer than the others, smooth, and not separated by an interspace, (syncranterian).

The form of the rostral plate is the most prominent peculiarity which separates this species from *Simotes D. & B.*

90. *C. coccinea nobis.* *Coluber coccineus* Blumenb. in Licht. & Voigt. Magaz. v. 1788, pl. 5. *Heterodon coccineus* Schl. Essai, ii. p. 102. *Rhinostoma coccinea* Holbr. N. Am. Herp. 1842, p. 125, pl. 30. Baird et Girard, Catal. p. 118. *Simotes coccineus* Dum. et Bibr. vii. p. 637. Günther, Cat. Brit. Mus. p. 26.

Two sp.	South Carolina.	Dr. Holbrook.
One sp.	Georgia.	Dr. Jones.
One sp.	South Carolina.	Dr. Blanding.
One sp.	"	Philada. Mus. in Ex.
One sp.	?	Dr. Wilson.

*RHINOCEILUS* Bd. et Grd. Type *R. Lecontei*.

Catal. Serp. Smiths. Inst. 1852, p. 120.

In dentition this genus is isodont. The entire urosteges distinguish it from *Rhinechis*. The general form is rather that of *Cemophora*.

91. *R. Lecontei* Bd. et Grd. l. c.  
One sp. Ft. Chadbourne, Texas. Smithsonian Institution.

*SIMOTES* Dum. & Bibr. Type *S. Russellii*.

Erpetologie Generale, vii. p. 624, 1853.

A. Form stout, calamarian; anal shield entire.

92. *S. phænochalinus nobis.* This is a small serpent, and resembles an *Oligodon* in form. The arrangement and number of cephalic plates are the same as in the *Russellii*, except that the rostral plate is higher, and not produced so far back upon the muzzle, and that the vertical is not so broad, and with lateral borders less convergent posteriorly. Superior labials seven, the third and fourth entering the orbit; inferior labials eight. Scales in seventeen rows small, rounded. Gastroteges 172, an anal, urosteges 41 pairs. Total length 7 inches 9 lines. Tail 1 inch.

The ground color is a light brown, and is crossed above by short black transverse bands, about fifteen in number, from the head to the end of the tail. These bands are wider on the back, and taper on the flanks. A transverse black band crosses the head from eye to eye on each side of the posterior

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suture of the postfrontals, and is continued beneath the eye on the suture of the fourth and fifth labials. A longitudinal black band proceeds from the transverse, passes through the middle of the vertical and along the suture of the occipitals, then widens and bifurcates on the neck. A crescentic black mark begins near the exterior border of the occipital plate, and extends a little beyond the commissure of the mouth, crossing the seventh upper labial.

One sp. Manilla.

Dr. Barnwell.

One sp. Philippine Islands.

Mr. Cuming, in ex.

The second of these specimens has, alternating with the cross bands, a transverse series of four separate spots; two dorsal, rounded, and one on each side, narrow.

93. *S. aphanospilus nobis*.—In this species the head and investing plates are shorter and broader than those of the last species; the sides of the vertical shields are more convergent posteriorly. As in other *Simotes* there are one pre- and two postoculars. Loreal a little longer than high; upper labials seven, third and fourth entering the orbit; inferior labials eight, the posterior one very small. Scales large, obtuse, imbricate, in seventeen rows. Genaials two pair, the posterior half the length of the anterior. Gastrosteges 173, anal one, urosteges 37 pairs. Length of body and tail 23 in. 5 l.; tail alone 3 in. 4 l.

The color of the upper surface of this serpent is a dull olive brown. From the neck to the base of the tail we count thirteen nearly equidistant scutcheon-shaped figures, brown bordered with black. These extend a short distance on the flanks, and are sometimes confluent with another series of smaller, similar figures on each side. In the middle of the interval between each dorsal figure is a small black spot. On the head the arrangement of markings is similar to that of the last species. They are, however, only indicated by narrow black borders enclosing the ground color. Lips and beneath dirty yellowish.

One specimen. Philippines.

Mr. Cuming, in ex.

The two species preceding are nearly allied to the *S. purpurascens Gthr.*, but comparison with the figures of Schlegel and Dum. et Bibr. at once reveals the differences in the markings of the head. The number of labials is also different.

#### B. Form slender; anal divided.

94. *S. Russelli Dum. & Bibr.* Erp. Gen. vii. p. 628. Russell, Ind. Serp. i. pl. 35.

One spec.

?

?

CORONELLA Laurenti. Type *C. Austriaca*.

Specimen Synopsis Reptilium 1768, p. 84. *Zacholus* Wagler, Natur. Syst. 1830, p. 190.

95. *C. Austriaca Laurenti.* *Zacholus Austriacus* Wagler. *Coronella laevis* Schlegel, Essai 1837, ii. 65.

Fourteen spec.

Italy.

Dr. Wilson (Bp. Coll.)

Five

"

Sicily.

"

"

Two

"

Europe

Gard. Plants (in ex.)

96. *C. Giron dica Dum. & Bibr.* *Coluber Giron dicus* Daudin, 1804. *Col. Riccioli* Metaxa, Monograf. p. 40, 1823. Bp. Fauna Italica.

Ten spec.

Italy.

Dr. Wilson (Bp. Coll.)

MACROPROTODON Guichenot. Type *M. cucullatus*.

Expédition d'Algérie, Rept. p. 22, No. 2.

97. *M. cucullatus nobis.* *Coluber cucullatus* Is. Geoff. St. Hilaire, 1827. *Macroprotodon mauritanicus* Guichen. loc. cit. 1846. *Lycognathus cucullatus* Dum. & Bibr. 1853. *Coronella cucullata* Gthr. 1858. ? *Zacholus bitorquatus* Bonap.

1860.]

The long anterior and isolated grooved posterior maxillary teeth appear to us to separate this species from *Coronella*.

One spec.	Algiers.	Gard. Plants, (in ex.)
Two "	"	Dr. Wilson, (Bp. Coll.)

PSAMMOPHYLAX Fitz. Type *P. rhombeatus*.

Systema Reptilium 1843, p. 26. *Trimerorhinus* Smith, Zool. S. Africa, p. ? 1849.

98. *P. rhombeatus* Fitz. *Coluber rhombeatus* Linn. *Coronella rhombeata* Boie, Schlegel. *Coelopeltis rhombeata* Wagl. *Trimerorhinus rhombeatus* Smith. *Dipsas rhombeata* D. & B.

One spec.	Cape of Good Hope.	Gard. Plants, (in ex.)
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TARBOPHIS Fleischmann. Type *T. vivax*.

Dalmat. Nov. Serp. Genera p. 18, 1831. *Trigonophis* Eichwald, 1831. *Ailurophis* "Fitz." Bp. 1832.

99. *T. vivax* Dum. & Bibr. *Coluber vivax* Fitz., 1826. *Tarbophis fallax* Fleisch. 1831. *Trigonophis Iberus* Eich. 1831. *Dipsas fallax* Schleg. Essai ii. 295. *Tachymenis vivax* Gthr. 1858. *Ailurophis vivax* Bp. Fauna Italica.

One spec.	Italy.	Dr. Wilson.
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HYPSIGLENA nobis. Type *H. ochrorhynchus*.

Dentition diacranterian; i. e. a long, smooth, posterior superior maxillary tooth, separated from the anterior by an edentulous space. Pupil elliptic, erect, body cylindrical. Head distinct, broad posteriorly, shortly conic anteriorly, much depressed. Cephalic shields normal. Two nasals, nostril between; one loreal; two pre-and two postoculars. Scales smooth. Gastrosteges not angulated. Anal and subcaudal scutellæ divided. Tail less than one fourth the total length.

This curious genus has points of resemblance to *Sibon Fitz.*, *Hemidipsas Gthr.*, *Tachymenis Wieg.*; while the general appearance is not unlike that of *Coronella Laur.* A perusal of the above diagnosis, cannot fail to convince the herpetologist that it possesses characters strongly distinguishing it from all, uniting as it does, in its general aspect, peculiarities of certain tropical and northern forms.

100. *H. ochrorhynchus nobis*.—Muzzle shortly conic; rostral plate prominent, encroaching a little on the pre-frontals. Nasal plates indistinctly separated, equal, their upper and lower borders parallel. Loreal longer than high. Lower preocular small, bounded anteriorly by the third upper labial. Eight upper labials, fourth and fifth entering the orbit; sixth and seventh very large. Vertical plate twice as long as broad; lateral borders slightly convergent. Superciliaries narrow; occipitals as long or longer than vertical, rounded posteriorly. Inferior labials eleven, sixth largest. Genaials two pair, the posterior acute. Scales in twenty-one rows. Gastrosteges 168, urosteges 48 pair. Total length, 12 in. 4 lines, tail 2 in. 3 lines.

*Coloration.* The upper surface light grey, with a series of large brown spots, separated by intervals of one scale wide. These spots are about forty-eight in number, upon the body; they extend transversely from the seventh to the fifteenth rows of scales, and are three or four scales in length. On the posterior part of the body they sometimes divide longitudinally, their moieties alternating or becoming confluent into a zig-zag band.

Alternating with these on each side, is a series of small spots formed by the brown borders of scales of the fifth and sixth rows. Another series of small spots opposite to the dorsal row, is formed by the shading of the adjacent borders of the fourth and fifth rows with the same color. Many of the scales of

[June,

the second row are also tipped with brown. There is a large brown spot on each side of the neck, sometimes confluent with an elongate central one, which extends to the occipital plates. A brown stripe passes from the eye to the neck spot, entirely covering the last upper labial. Top of the head brownish grey, indistinctly spotted with pale brown. Labial plate paler; frontals and rostral ochreous. Beneath yellowish-white, immaculate.

One specimen in the Academy, and numerous others in the National Museum, Washington, received from Mr. John Xantus, from Cape St. Lucas, California.

101. *H. chlorophaea nobis*.—Number of labials and rows of scales the same as in the last species. The scales of the body are, however, more elongate, and partly on this account are arranged in rows more oblique in an antero-posterior direction. The vertical plate is a little broader, and the head is narrower in proportion to its length. The body is rather more slender.

The color is a greenish ash, much darker than in the preceding species. The dorsal spots, instead of being brown, are black, and separated by intervals of two scales in width. They are much smaller, occupying only the space from the ninth to the thirteenth longitudinal rows, and are one scale and a half long. They frequently divide and alternate, and their number on the body amounts to from fifty-eight to sixty-six. Two rows of smaller alternating spots appear on the sides, one upon the sixth and seventh rows of scales, the other on the fourth. The distribution of colors on the head and neck is much as in the last species, except that the neck spots are a little longer. The brown is, however, replaced by black, and the ochreous by olivaceous. The crown and muzzle are thickly punctulated with black. Beneath pale olivaceous. Gastrosteges 167, urosteges 55. Total length, 15 in. 6 l., of tail 2 in. 3 l.

Two specimens from the National Museum, there received with others from Fort Buchanan, Arizona, where they were collected by Mr. Irwin.

TACHYMENIS Wiegmann. Type T. Peruviana.

Nova Acta, Acad. Caes. Leopold. Carol. xvii. 1834, p. 251.

102. *T. Chilensis Girard*, U. S. Naval and Astronomical Exp. 1855, ii. p. 213, Günther, Cat. Brit. Mus. 1858, p. 34, *Coronella Chilensis* Schlegel. Guichenot, Hist. Chili, ii. p. 79. *Dipsas Chilensis* Dum. & Bibr. vii. p. 1159.

Var. near the third of Dum. & Bibr.

Belly as in the ordinary variety, but the upper surface of the body of a light rufous brown, more deeply shaded on the fourth and ninth rows of scales.

One specimen. Quinquina Id. Dr. Ruschenberger.

Variety fourth, nobis.

Coloration of the upper surface as usual, but upon each gastrosteg there is a single central, oblong, spot. These form a medial, unbroken, black band, from near the chin to the anus.

One specimen. Talcahuano, Chili. Dr. Ruschenberger

103. *T. hypoconia nobis*.—The head of our single specimen is mutilated, hence a detailed description of the plating cannot be given. The shields seem, however, to differ but little from those of the preceding species; the prefrontals are relatively smaller, and the superciliaries larger. There are eight superior labial shields, the eye resting on the fourth and fifth; the sixth and seventh are disproportionately large. Nine inferior labials. Scales large, in nineteen rows, the exposed part of those of the first row higher than long. Body stout; gastrosteges 140, one divided anal; urosteges 52, relatively more numerous than in *T. Chilensis*.

Coloration.—The upper surface of the head, body and tail, is of a wood brown, many of the scales black at their bases. The first, second, third and 1860.]

fourth rows of scales are densely punctulated with black, thus forming an indistinct band upon each side. The punctulations are more numerous upon the fourth row, hence the band is better defined upon its dorsal margin. A pair of dark bands commence upon the occipital plates, and extend a short distance upon the back, enclosing a light vitta. The dark bands send off upon each side two branches, one to the middle of the superciliary plate, and one to the superior suture of the upper postocular. From the inferior suture of the same plate, a deep brown vitta extends to the angle of the of the mouth; this continued in front of the orbit as far as the nostril. The superior labial shields are paler than the crown, are punctulated, and have upon their postero-superior angle a triangular brown mark. Belly yellowish-grey, densely punctulated with black, (whence the name.) On each side, the gastrosteges are crossed near their extremities by a narrow black band, which is continuous from the throat to the end of the tail. Anteriorly the punctulations arrange themselves in two series of indistinct V-shaped marks within the bands but they are quite ill defined, and in some specimens will probably be absent.

One specimen.

Buenos Ayres.

Dr. A. Kennedy.

*CONIOPHANES* Hallowell, MSS. Type *C. fissidens*. \*

This genus consists of coronelliform serpents with grooved teeth, of rather a slender habit, having a distinct, depressed head, conic muzzle, one preocular and a divided anal plate. Perhaps the *Coronella bipunctata* of Günther belongs to it.

It differs from *Dromicus* in the grooved maxillary tooth, and the less lanceolate head. *Philodryas* has a much more elongate body and tail. A peculiarity in the coloration of the species consists in the numerous punctulations of the upper and under surface, whence probably the name (*conus pulverulentus*.)

104. *C. punctigularis* nobis.—Scales thin, lanceolate, in twenty-one longitudinal rows. Head broad posteriorly, muzzle rather shortly conic. Prefrontals equal in size to the fourth superior labial; post-nasal larger than prenasal; loreal as high as long; preocular not reaching the vertical. Vertical elongate, its sides parallel; occipitals moderate, each bounded by two large, and two small temporals. Postoculars two; superior labials eight; eye over the fourth and fifth. Symphyseal unusually broad; inferior labials nine. Gastrosteges 121, one divided anal, urosteges 44, (tail mutilated.) Total length 14 in. 6 l. Tail 3 in. 4 l. (was probably nearly two inches longer.)

*Coloration*.—Above, dark chestnut-brown, shaded with grey on the top of the head. On each side of the neck, three scales behind the terminal superior labial, a whitish line commences. These widen, assume a pale ferruginous hue, and extend to the tip of the tail. They cover the sixth, seventh and half of the fifth and eighth rows of scales on each side, and enclose a brown dorsal band five scales wide. Upon the neck the brown of the sides is very deep, and extends forward as a band to the orbit. It is bordered beneath with white. Lips and throat yellowish-white, densely punctulated with brown. Gastrosteges also yellowish-white, punctulated irregularly at their tips.

One specimen.

Honduras.

Mr. J. S. Hawkins & Dr. J. L. Le Conte.

*C. fissidens* *Hallow.* differs from the present species in several points. The body is more elongate, there being 140 gastrosteges instead of 121. The head is more depressed, and the muzzle more prominent, since the prefrontal plates are in the plane of the occipitals. This form, together with the dark

\**Coronella fissidens* Gthr. Cat. Brit. Mus. p. 36.



color, and the narrow light band on the upper borders of the labials, is suggestive of certain genera of venomous snakes, as *Hypnale*. The lateral borders of the vertical plate in *fissidens* are not so long nor so nearly parallel as in *punctigularis*. The whole head is relatively narrower. The colors of the former are deeper, the longitudinal bands being very indistinct. The throat is not so thickly punctulated.\*

*TÆNIOPHIS* Girard. Type *T. tantillus*.

U. S. Astronomical Expedition, ii. p. 215. 1855.

105. *T. vermiculaticeps nobis*. Size small; form slender; tail one-third the total length. Head distinct, elongate ovoid; the muzzle short and the eye large and far forward. The last superior maxillary tooth is longer than those preceding it, and smooth. As in the other species of the genus, there are two postoculars, one preocular, and a divided postabdominal scutella. Scales in seventeen longitudinal rows. Frontal plates small, superciliaries and vertical elongate, the latter with its anterior border nearly straight, the lateral slightly convergent. Nostril principally in the prenasal; postnasal higher. Loreal as high as long; preocular narrow and high, not reaching the vertical. Superior postocular twice as long as the inferior. Superior labials eight, fourth and fifth entering the orbit. Inferior labials ten. Genecials two pair, the posterior one-third longer than the anterior, divaricating. Gastrosteges 117, one anal, urosteges 79. Total length of the largest specimen 13 in. 8 lin. Tail 4 in. 7 lin.

*Coloration*. The ground color of the upper surface of the body is a rich yellowish brown—where the epidermis is lost, of a brownish straw color. A pair of deep brown bands begin, one at the externo-posterior angle of each superciliary shield, and converge upon the neck. There each narrows to a width of one scale, and enclosing a vitta of the ground color one scale in width, extends to the origin of the tail. Here they unite, and extend to the extremity of that member as a median band. A second pair of brown bands commences one at each nostril. It passes through the eye to beyond the angle of the mouth, where its inferior border becomes ill defined, and continues so throughout its whole length. The upper border is clearly defined to the end of the tail. The medial light dorsal vitta bifurcates on the neck, and extends as far as the superciliary plates. The intermediate space is irregularly vermiculated with delicate marks of the same color. Upper and lower labials whitish, nar-

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\*The following is the description of a third species of this genus, a single specimen of which is in possession of the National Museum, Washington. It was discovered by Sr. R. M. De Oca in the vicinity of Jalapa, Mexico.

*C. proterops nobis*.—Size rather small. Scales in nineteen longitudinal rows, thin, elongate, obtuse. Head scarcely distinct, short profile of muzzle not elevated. Anterior plates of the head small; loreal a little longer than high. One pre- two postoculars. Superior labials seven, third and fourth entering the orbit. Vertical plate elongate, lateral borders convergent, posterior angle acute. Occipitals long. Inferior labials nine; genecials two pairs, nearly equal. Gastrosteges 130, anal one, divided, urosteges? (tail badly mutilated.) Head and body 9 in. 7 lin. in length. The stump of the tail appears tetragonal in section.

*Coloration*. Above light brown, every scale densely punctulated with darker, especially near the margins. From the first to the fourth row of scales this is deeper, giving the sides a darker shade. The vertebral row of scales, from the occipitals to the end of the tail is also darker. Top of the head densely and obscurely vermiculated and punctulated. The dark shade on the fourth row of scales becomes a band anteriorly, and is bordered above and below with white on the neck. The lower white border is continued to the eye, and is bordered above on the labials with black. The upper white border is discontinued on the neck, but reappears as a spot, three scales back of the occipitals. Inferior half of rostral, upper and lower labials, chin, throat and belly, light brownish yellow, densely punctulated with brown. Each labial with a darker spot in the centre. Fewer punctulations on the urosteges.

1860.]

rowly edged with brown. Chin and belly yellowish white, each gastrostegæ with a deep brown dot at each end near the posterior border.

This very elegant species was discovered in Veragua, New Grenada, by Mr. R. W. Mitchell, who presented two specimens to the Academy. We also possess a third specimen, native country unknown. It is nearly allied to *T. tantillus* Girard, l. c., but in that the vertical plate is narrower, the sides subconcave, and in contact anteriorly with the preocular. The coloration is also quite different.

DIADOPHIS Baird & Girard. Type *D. punctatus*.

Catalogue North Amer. Rept. in Smiths. Inst. 1852, p. 112. *Spiletes* (i. e. *Spilotes*) "Wagler." Swainson, not Wagler.

106. *D. decoratus nobis*. *Coronella decorata* Gthr. Cat. Brit. Mus. p. 35.

One of our specimens has two preocular plates, another three. In neither do we find the upper maxillary teeth materially longer behind. Nevertheless, our placing this serpent in *Diadophis* is altogether provisional; in the unusual length of tail, as well as in distribution of colors, it differs from this genus. We will not give a detailed description at present, as the color of our specimens has been altered by the loss of the epidermis. The four bright yellow spots on the occiput and nape render this a very distinct as well as beautiful species.

One spec.	Veragua, N. Grenada.	Mr. R. W. Mitchell.
One "	?	?

107. *D. occipitalis nobis*. *Ablabes occipitalis* Günther, Cat. Brit. Mus. p. 29.

We have strong doubts of the validity of this species. Seven upper labial shields are occasionally found in the *punctatus*, and the nuchal interruption of the yellow collar occurs in the *pulchellus* B. & G. We have, however, never seen a *Diadophis* with eight upper labials and an interrupted collar.

We have two specimens corresponding with the *occipitalis* Gthr., one the locality unknown, the other believed to have been obtained in central Kansas. Presented by Mr. Henry Yarrow.

108. *D. punctatus* Bd. & Gird. *Coluber punctatus* Linn., Holbrook, etc. *Homalosoma punctatum* Wagl. *Spiletes punctatus* Swains. *Calamaria punctata* Schleg. *Ablabes punctatus* Dum., Bibr., Günther, Hallowell.

Three spec.	S. Carolina.	Dr. Holbrook.
One "	Morris Co., N. Jersey,	Dr. J. C. Fisher.
One "	Bucks Co., Penn.	?
Two "	?	Dr. Bache.
One*	New Jersey.	Mr. Tiffany.
Four "	?	Dr. Hallowell & Smiths. Inst.
One†	(young) Allegheny Co., Pa.	Mr. D. C. Trout.
Two "	?	Dr. T. B. Wilson.
Five	(young) ?	?

*Var. pallidus nobis*. In the number of rows of scales and labial plates and collar, similar to *punctatus*; but the color is a light olive brown, shaded with bluish towards the gastrosteges, which it borders. There is no central series of spots on the belly.

One spec.	California.	Dr. Heermann.
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*Var. stictogenys nobis*. This may possibly be specifically distinct from the *punctatus*, but it is more probable that in a large suite of specimens

\* This specimen has but seven upper labials, eye resting on third and fourth.

† The vertical shield is as broad as long in this specimen.

the distinctions would not be borne out. The number of rows of scales is fifteen; the superior labials are seven, eye resting on third and fourth, as is sometimes the case in *punctatus*. Color above light brownish olive, a broad yellow collar, bordered with black as in *punctatus*. Each gastros-tege has a brown dot at its extremity, and the central part of the margin the same color, forming a series of transversely elongated spots. Fifth and sixth upper labials each with a brown dot. Symphyseal and lower labials with a brown dot in the centre of each, two on each anterior genaeal, one at the posterior end of postgenaeals and of all the throat scales.

One specimen, locality and donor unknown.

109. *D. dysops nobis*. Scales in 15 rows; superior labials eight, eye resting on the fourth and fifth; inferior labials eight. Color above olivaceous slate blue, beneath light yellowish brown, with three longitudinal rows of spots. A very narrow yellow collar involving a part only of each scale that it crosses, and bordered with blackish. Upper borders of superior labials (not temporals) black. It is in the form of the head that it differs from the *punctatus* most strikingly. The muzzle is very short, rounded and depressed; hence the rostral, frontals and anterior labials are very small. The loreal is a little smaller than the upper postocular. The vertical is small, the lateral borders convergent. Superciliaries short and broad, occipitals long, bordered by five temporal plates on each side. Breadth of the head at the angle of the mouth but little less than the length anterior to the same point.

One specimen, locality and donor unknown.

Size equal to that of an adult *punctatus*. Though small, this serpent has a malignant expression, hence the name.

CONTIA Bd. & Grd. Type *C. mitis*.

Catalogue Rept. Smiths. Inst. Serpents, p. 110, 1862.

This genus is allied to *Tæniophis Girard*, but is of a stouter and more depressed form, and has but one nasal plate. The teeth are minute and equal.

110. *C. mitis* Bd. & Grd. l. c.

One specimen,

Petaluma, Cal.

Smiths. Institution.

111. *C. episcopa nobis*. *Lamprosoma episcopum* Kennicott, U. S. and Mex. Bound. Survey, ii. pt. ii. p. 22, 1859, pl. xxi. fig. 1.

It is now the opinion of Mr. Kennicott that this small serpent does not belong to the *Lamprosoma* of Hallowell. We concur with him in this, and believe that it cannot be generically distinguished from the species just preceding. It resembles certain Calamarian genera, but were its size quadrupled the similarity would probably disappear.

One sp.

Rio Seco, Texas,

Smiths. Inst.

LIOPHIS Wagler. Type *L. reginae*.

Natur. Syst. Amphib. p. 187, 1830. Dum. et Bibr. vii. 697, 1854. Günther, Cat. Colubr. Brit. Mus. 42, 1858. *Dromicus* (Bibron) Dum. Bibr. vii. 646 et Gthr. l. c. 126, pars. *Lygophis* (Fitz.) Tschudi pars.

We have included in this genus the *Dromicus melanonotus* and *D. lineatus* of modern authors. It appears to us impossible to establish any generic distinction between these species and the *L. reginae*, while their comparatively short tails will separate them from the slender *Dromicus fugitivus* and congeners. It is here that the coronelline form seems to pass into the true colubrine.

112. *L. cobella* Wagl. Dum. et Bibr. Gthr. locis citatis.

Seven specimens

Surinam.

Mr. C. Hering.

Three "

"

Dr. Hering.

One "

"

Dr. Colhoun.

1860.]

One specimen	?	Dr. Wilson.
One "	Para.	Col. Abert.
Two " (young)	Surinam.	Mr. Wood.
Two " (young)	"	Dr. Colhoun.

Three of the young specimens have a pair of white dots on the occipital plates, as in the *Tropidonotes*. The transverse, band-like disposition of the small white C-like marks, apparent in specimens of this age, remains during adult age in some, thus affording a transition to the

Var. A. <i>Gthr.</i> With distinct transverse light bands.		
One sp.	Para.	Col. Abert.

113. *L. breviceps nobis*. Head short, not very distinct from the body. Plates of the head similar to those of *L. cobella* except that the occipital plates are shorter; the vertical is broader, its lateral borders measuring less than the anterior; the rostral is broader; and there are but seven superior labials, the third and fourth entering the orbit. The sixth superior labial widens upwards, and supports nearly the whole length of the temporal. In *L. cobella* the upper margin of this plate is shorter than the lower. Two postoculars, both in contact with the first temporal. Second temporal large, one or two other small ones. One preocular; loreal small. Eight inferior labials, fifth largest, anterior part in contact with posterior geneials (sixth and seventh in *cobella*). Scales in seventeen rows. Gastrosteges 154, a bifid anal, urosteges 54 pair. Total length 17 in. 5 lines. Tail 3 in. 2 lin.

Color above, a deep brown without a trace of the small white marks of the *cobella*, becoming darker posteriorly, and reaching to the gastrosteges. It is crossed by very indistinct darker bands, formed by a single dark scale in every other longitudinal row. These bands are two or three scales apart, and unite on the flanks, into the black transverse bands of the belly, which are irregular and broad, almost excluding the yellow ground in some places.

One spec. Surinam. Dr. Hering.

*Obs.*—Comparison with our specimens of *L. cobella* has induced us to consider this distinct on account of: First, the comparative smallness of the head; second, the shortness of the head shields; third, the less number of labials; fourth, the form of the sixth superior labial; lastly, the color; which, however, is of but little importance considered alone. It recalls the genus *Helicops*.

114. *L. Merremii* Dum. and Bibr. *L. miliaris, poecilogyrus et doliatus* Wagler. *Coluber Merremii, poecilogyrus et doliatus* Neuwied, Beitr. und Abbild. Bras. Lief. 8.

Var. A. <i>Gthr.</i> Cat. Brit. Mus. 44.		
Three spec.	S. America.	?

Var. <i>poecilogyrus</i> Neuw. l. c.		
One sp.	S. America.	Capt. J. Jameson.

Our specimen is evidently an adult.

Var. *sublineatus nobis*. Olive brown, irregularly varied with black, which forms posteriorly an irregular band on each side, as in *L. reginae*, with a bright one above it.

One spec. (half grown)	Bueno's Ayres.	Mr. Kennedy.
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Young, <i>Col. doliatus</i> Neuw. l. c.	"	"
One spec.	"	"
One spec.	Brazil.	Garden of Plants.

115. *L. reginae* Wagl. l. c. *Coluber reginae* Linn. *Col. graphicus* Shaw. *Natrix reginae* Merr. *Coronella reginae* Schl. Essai, ii. p. 61. *Lygophis reginae* Tschudi, Reise in Peru.

Two sp.	Surinam.	Dr. Hering.
One sp.	Para.	Col. Abert.

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- Var. without temporal spot.  
 One sp. Para. Col. Abert.  
 Var. without temporal spot or tail streak.  
 One sp. Buenos Ayres. Mr. Kennedy.  
 Young, muzzle short, neck with transverse blotches.  
 One sp. Surinam. Dr. Colhoun.  
 One sp. Panama. Dr. Ruschenberger.
116. *L. conirostris* Gthr. Cat. Brit. Mus. p. 46.  
 The longitudinal dorsal bands are indistinct anteriorly.  
 One sp. ? Dr. Wilson.  
 One sp. Buenos Ayres. Mr. Kennedy.
117. *L. melanotus nobis*. *Coluber melanotus* Shaw, Zool. p. 534, 1802.  
*Coronella melanotus* Boie, Isis, 1827, 532, and *C. bilineata* ditto. p. 525. ? *Col.*  
*vaninus* Bonnat. *Col. vittatus* Hall. Proc. Acad. Nat. Sci. ii. 242, 1845. *Lio-*  
*phis vittatus* Cope, l. c. 1859, p. 297.  
 Ten sp. Near Caraccas. Dr. S. Ashmead.  
 One sp. West Indies. Mr. Engstrom.
118. *L. lineatus nobis*. *Coluber lineatus* Linn. *Coronella lineata* Boie.  
*Lygophis lineatus* Fitz. *Herpetodryas lineatus* Schl. Ess. ii. 191. *Dromicus*  
*lineatus* D. & B. vii. p. 655. Gthr. Cat. Brit. Mus. 134.  
 Two sp. Surinam. Dr. Hering.  
 Two sp. " Dr. Calhoun.

PLIOCERCUS nobis. Type *P. elapoides*.

Body cylindrical; head scarcely distinct; tail two-fifths of the total length. Cephalic plates normal: two pre-, two postoculars, one loreal, two nasals. Anal scute bifid. Scales smooth. Dentition as in *Lampropeltis*; i. e. the posterior superior maxillaries not isolated, longer, much recurved and smooth. The great length of the tail separates this genus from *Lampropeltis* and *Erythrolamprus*: it unites the dentition of the former with the preanal scute of the latter. *Coronella* and *Phimothyrus nobis* have comparatively short tails. In *Coniophanes* the head is more distinct, the body more slender and not so firmly cylindrical.

119. *P. elapoides nobis*.

Rostral plated just visible from above: prefrontals one third the size of the postfrontals. Length and breadth of the vertical plate equal to the suture of the occipitals. The latter are oval, and rounded behind. Five marginal temporals on each side. Upper preocular large, not reaching the vertical; inferior one very small, partially between the third and fourth superior labials. Height and length of loreal equal. Eight superior labials, fourth and fifth entering the orbit. Inferior labials eight, the last three times as long as the seventh, sixth largest; these three plates border within a large shield which diverges from the outer posterior extremity of the posterior genaeal. Two equal pairs of elongated genaeals. Scales in seventeen longitudinal rows. *Gastrosteges* 131; *urosteges* 89 pair. Total length of adult, 19 in. 9 l., tail 7 in. 6 l.

*Coloration*.—The ground color is brilliant red, which encircles the body above and below in bands of from four to six scales in width. These are separated by triads of black rings including yellow intervals,—ten or eleven on the body, one at the anus, and six or seven on the tail. The outer ring of each triad is one and a half scales wide, and is not continued on the belly; the yellow interval is of the same width, and the central black ring is three and a half or four scales wide. The first triad is upon the head and neck; the central black ring is seven or eight scales wide and does not extend upon the neck, but involves the ends of the occipitals and the last upper labial. The anterior yellow ring crosses the occipitals, and involves one and a half tempo-1860.]

rals, the sixth, seventh and half the eight upper labials. All the head anterior to this is lustrous black, except a narrow oral border of yellow. Chin immaculate. Many of the scales of the body are tipped with brown, many with black.

This beautiful species resembles in the distribution of its colors certain *Elapses*—particularly *decoratus* and *Dumerilii*. It is a beautiful example of analogy of coloring. We have four specimens, one adult, one half grown, and two young, which were obtained through the liberality of John Cassin, Esq., from Sr. R. M. De Oca who collected them near Jalapa, Mexico.

LAMPROPALTIS Fitzinger. Type *L. Sayi*.

*Systema Reptilium*, 1843, p. 25, et *Sphenophis* ead. loc. *Ophibolus* Baird and Girard, *Catal. Serp. Smiths. Inst.* 1852, p. 82. *Coluber*, *Pseudoeryx*, *Coronella* et *Ablabes* sp. auctorum.

This group was first defined, and its species enumerated by Profs. Baird and Girard, in their "Catalogue." In structural peculiarities it fulfils all the requisites of a strictly natural group. It represents in America the *Coronella* of the Old World, from which it differs in possessing an undivided postabdominal scutella, and a peculiar form of posterior upper maxillary teeth. These are closely set, stout, much compressed and trenchant, with their anterior borders rather abruptly curved backwards. It also approaches *Erythrolamprus*, which may be distinguished by the grooved superior maxillaries, and divided postabdominal scutella. In geographical range it extends from Maine (*L. triangulara*) to Panama (*L. micropholis*.)

In the *Neue Classification der Reptilien* of Fitzinger, (1826) p. 55, we find that the seventh genus of the nineteenth family of that author, *Colubroidea*, is *Pseudoeryx* Fitz. There are seven species enumerated, and the *Coluber doliatus* of Linné is the first. Where there is no possibility of ascertaining what species an author assigns as the type of his genus, it is the practice of naturalists to regard as such that which stands first in his enumeration. Adopting that rule in the present instance, we should have to employ *Pseudoeryx* in place of *Lampropeltis* of later date—a substitution by no means to be desired. Fortunately, however, we believe that Fitzinger did indicate with sufficient clearness what type of form he intended to characterize. On page 29 of the same work he thus characterizes *Pseudoeryx*: "Abdomen scutatum. Cauda non compressa. *Oculi verticales*. Rostrum rotundatum." This diagnosis at once shows that he considered the third\* species on the list—*P. Daudinii* (*Dimades plicatilis* Gray,)—as the true representative of the genus; and for it, the name *Pseudoeryx* is not inappropriate. This supposition is confirmed by the fact that in his *Systema Reptilium*, published in 1843, he retains the genus, and distinctly assigns *P. plicatilis* as the type.

120. *L. Sayi nobis*. *Herpetodryas getulus* Schlegel, *Essai*, ii. p. 198, 1837, (not *Col. getulus* Linn). *Lampropeltis getulus* Fitz. l. c. *Coluber Sayi* Dekay, *New York Fauna*, Reptiles, 41, 1842.

*Coronella Sayi* Holbr. N. Amer. Herp. iii. p. 99, 1842. Dum. Bibr. vii. p. 619, 1853. Günther Cat. Brit. Mus. p. 41, 1858. *Ophibolus Sayi* Bd. & Grd. *Catal.* p. 71, 1852.

Two spec.	?	?
One "	Louisiana,	Dr. Hallowell.
One "	?	Dr. Bache.
One "(half grown)	Missouri,	Gard. of Plants in ex. (as <i>Herpetodryas getulus</i> ).
Two "(young)	?	Dr. Hammond.

\* The diagnosis is equally applicable to the second species *P. pyrrhogrammus*, if that be the *Col. erythrogrammus* of Daudin. The fifth species is *P. schistosus*, a *la homalopsides*.

121. *L. splendida nobis. Ophibolus splendidus* Bd. & Girard. Catal. p. 83, 1852. Mex. Boundary Survey, Vol. ii. pt. ii. pl. 14.

One sp. Ft. Buchanan, Arizona, Smithsonian Institution.

122. *L. getula nobis. Coluber getulus* Linn., Harlan, Peale, Günther, l. c. p. 249. *Pseudoelaps getulus* Fitz., Neue Class. 1826, p. 56 (not the type.) *Coronella getula* Holbr. Herp. iii. 75. 1842, Dum. Bibr. vii. p. 616. *Ophibolus getulus*, Bd. & Grd. l. c. 72.

One sp. S. Carolina, Dr. Holbrook.  
Three " New Jersey, Messrs. Benj. Badger and Peter Doyle.  
Two " (young) ? ?

The posterior supermaxillary teeth are but little longer than the anterior, but are much stouter, and strongly compressed, as in other species of the genus. The young may be distinguished from the young of *P. Sayi* by the less number of the transverse bands. In *getula* they number from 30 to 45, in *Sayi* from 70 to 80, they are also more irregular in the latter.

123. *L. Boylii nobis. Ophibolus Boylii* Bd. & Girard, Catal. p. 69, 1852. *Coronella balteata* Hallow. Proc. Acad. Nat. Sci. 1853, p. 236, U. S. Pac. R. R. Exped. Williamson's Expl. p. 14, pl. 5.

A fine species, representing the *getula* in California.

Three sp. California, Dr. Heermann.  
One " Cape St. Lucas, Cal. Smithsonian Institution.

In this specimen the vertical plate is more elongate than usual, and almost trigonal in outline. Many of the scales in the light transverse bands are black at their bases.

124. *L. calligaster nobis. Coluber calligaster* " Say," Harlan, Med. and Phys. Res. 122, 1835. *Ablabes triangulum* var. *calligaster* Hallowell, Proc. Acad. Nat. Sci. 1856, p. 244. *Ophibolus Evansii* Kenn. Proc. Acad. 1859, p. 99.

This species is attributed to Say by Harlan and others, but after a most careful examination of Long's Expedition to the Rocky Mountains, we have failed to discover any allusion to it by that author.

In the second volume of that work, p. 330, it is stated that such of the specimens collected by the expedition as arrived in Philadelphia, were deposited in the Philadelphia museum. It was from specimens of the present species in that collection that Harlan drew up his description; and the same are alluded to by Dr. Holbrook, N. Amer. Herp. iii. p. 72, where he asserts their identity with the *Coluber eximius*. One of these, a stuffed skin, presented to the Academy by Dr. Holbrook, and labelled by Dr. Hallowell "original specimen," is now before us. We can assert its identity with the *Ophibolus Evansii* of Kennicott both from his description and from comparison with specimens collected by Dr. Hammond in Kansas, and described by Hallowell l. c. They all have twenty-five rows of smooth scales.

As to the *Scotophis calligaster* of Kennicott, l. c., which belongs to a genus different from the present, we believe it is a serpent distinct from the *Coluber calligaster* of Harlan, although in the description of the former author we read "there can be no hesitation in referring this species to the *Coluber calligaster* of Say." In order to avoid the confusion which must result from the possession of the same specific name by two serpents closely resembling each other, and inhabiting the same section of country, we propose for the species of Mr. Kennicott the appellation *rhinomegas*.

Three sp. Kansas, Dr. Hammond.  
One " Missouri, Dr. Holbrook.

125. *L. rhombomaculata nobis. Coronella rhombomaculata* Holbrook, N. Amer. Herp. iii. p. 103. 1842. *Ophibolus rhombomaculatus* Bd. & Grd. l. c. p. 73, 1852.

One sp. Georgia, Dr. Holbrook.

1860.]

126. *L. triangula nobis*. Le Triangle, Lacep. Hist. Serp. ii. 331, 1789, *Coluber triangulum* Boie, Isis, 1827, p. 537. *Col. eximius* Dekay, New York Fauna, pl. 12, fig. 25, 1842. Harlan, Storer, Holbrook, Günther. *Pseudoelaps* Y. Berthold. 1843. *Ophibolus eximius* Baird et Girard, Catalogue, p. 87, 1852. *Ablabes triangulum* Dum. Bibr. Erp. Gen. vii. 315, 1853. Do. vars. *clericus* et *eximius* Hallowell, Proc. Acad. Nat. Sci. 1856, 245-6.

The dentition of this species is not different from that characteristic of the genus. The posterior upper maxillary teeth are longer and stronger than the anterior, though not so much so as in *L. Sayi*. They are thickly set, so compressed as to give them a great antero-posterior diameter, and have a rather abrupt posterior curvature. This species cannot be arranged in the same genus as *Lycodonomorphus rufulus* Fitz. (type of *Ablabes* Dum. & Bibr.) which, according to Schlegel and Smith, has the anterior maxillary teeth a little longer than the posterior. The tail is one fourth or fifth of the total length, while in all the species of *Lampropeltis* before us, that member is very short, being never more than one seventh or one eighth of the total length. The arrangement of this species with the *Coluber guttatus* is simply the result of a mistaking of analogy for affinity.

We have seen no second specimen which corresponds with the type of Profs. Baird and Girard's *Ophibolus clericus* in the form of the head and position and size of the eye. The specimen alluded to by Dr. Hallowell, l. c., from New Jersey, approximates remotely in these respects, though resembling it much in the number and size of the dorsal spots. We incline to think that no characters of specific value can be deduced from these; there are specimens intermediate, as respects their size and number, between the highest in *eximius* to the lowest in *clericus*, as defined in Baird and Girard's catalogue. And there are indifferently one or two rows of spots on the sides. What the true *clericus* is, more specimens alone can show.

	A. Spots as in "eximius."	
One spec.	?	Dr. Bache.
" "	Berks Co., Penna.	?
Two "	?	?
One "	"S. Carolina."	"Mr. Jas. Reade."
	B. Spots as in "clericus."	
One spec.	Near Trenton, N. J.	Mr. C. C. Abbott.
One "	Near Haddonfield, N. J.	Dr. G. Watson.
One "	New Jersey.	Mr. S. Ashmead.
Three spec.	Near Philadelphia.	Dr. E. Hallowell.
One "	S. Carolina.	?
Three "	?	Dr. Wilson.
One "	?	Dr. Blanding.
Two "	?	?

127. *L. doliata nobis*. *Coluber doliatus* Linn. *Coronella doliata* Holbr., N. Am. Herp. iii. 105, 1842, pl. 24. Do. var. B. Günther, Cat. Brit. Mus. p. 42. *Ophibolus gentilis* Bd. et Girard, Catal. p. 77. Marcy, Expl. Red Riv. p. 229 pl. 8.

In the true *Coronella doliata* of the Eastern States the black rings forming each pair, separate on the flanks, and become more or less confluent with the adjacent ring of the next pair. The belly is also irregularly varied with black. These peculiarities are well represented in Holbrook's figure. The only constant difference observable between eastern specimens and those from Kansas, which agree closely\* with the descriptions and figure of *Oph. gen-*

\* Dr. Hallowell (Proc. Acad. 1856, p. 248) speaks of the difference between these specimens and Baird & Girard's descriptions as considerable; to us they appear very slight.



tilis Bd. & Grd., is, that in the former the whole of the occipital shields are included in the black of the crown, in the latter the tips of those shields are crossed by the first yellow band. We do not feel satisfied that this is of specific value.

One sp.	Delaware.	J. Green.
" "	"	Mr. Drexler.
" "	Washington, D. C.	Dr. Burt, U. S. N.
" "	?	?
Four sp.	Kansas.	Dr. Hammond.
One "	Creek Boundary.	Dr. S. W. Woodhouse.

128. *L. coccinea nobis*. *Coronella coccinea* Schleg., Ess. ii. p. 57, 1837. *Sphenophis coccinea* Fitz. Syst. Rept. 1843, p. 25. *Ophibolus doliatus* Bd. et Grd. l. c. p. 76, 1852. *Calamaria elapsoidea* Holbr. N. Am. Herp. iii. p. 119, 1842, et *Osceola elapsoidea* Bd. & Grd. col. p. 133, (founded upon specimens in which the loreal plate is abnormally absent.)

This species is closely allied to the preceding, but may be distinguished by the following peculiarities: The scales are in seventeen and nineteen rows instead of twenty-one. The pairs of rings are fewer in number, (thirteen to seventeen on the body,) and do not become confluent on the flanks. The belly is not varied with black. From the anterior part of the occipital plates to the muzzle the color is red, not white or yellow, and without black punctulations. The muzzle is depressed, and the superciliary plates are very small, giving the eyes a greater vertical field than in the *doliata*. The tips of the occipitals are crossed by the first yellow ring.

Many of these peculiarities are alluded to in the very accurate description of Herr Schlegel, and to us it is perfectly plain that he had the present species before him when writing it. The species is probably southern in its distribution.

One sp.	Mobile.	Dr. Nott.
" "	Georgia.	Maj. Le Conte.
" "	?	?

129. *L. annulata* Kennicott, MSS. This, perhaps the most beautiful species of the genus, resembles *doliata*, but the scales are very broad, and the gastrosteges opposite to the red interval of the back are totally black. The confluence of the black rings bordering the red does not take place on the scales of the sides. For a more detailed description we refer to Kennicott's forthcoming article.

One sp.	Texas.	Capt. J. P. McCown.
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130. *L. micropholis nobis*. Scales in twenty-one longitudinal rows, small, short and obtuse. Temporal region swollen, giving the depressed head an appearance of distinctness. Plates of the head much as in *doliata*; the superciliaries and vertical are however larger, and the longitudinal line of suture of the occipitals is only three-fourths the length of the latter plate. The outer borders of the occipitals present two posterior divaricating angles, and one on each side at the end of the first temporal. Upper labials seven, third and fourth entering the orbit. Inferior labials nine, the seventh twice as large as the last two together. Other particulars as in *doliata*. Gastrosteges 219; one entire anal; urosteges 43 pair. Total length 16 in. 11 l.; tail 2 in.

The color is a delicate red with a black tip upon each scale. The body is completely encircled by ten pairs of jet black rings, which are anteriorly ten scales apart, posteriorly seven. The space included in each pair is three or four scales wide, and is red—not yellow—each scale having a black tip. The tail is ornamented with two pair of black rings and a black tip. Eighteen scales anterior to the first pair of rings, a black collar four scales wide encircles the neck, scarcely touching the tips of the occipitals. The superciliary 1860.]

vertical, except its anterior border, and the occipitals within a line drawn diagonally from the posterior termination of their suture to the lower postocular, are black. A spot below the eye, one on the chin, and the posterior borders of most of the other plates of the head are black.

One sp.

Panama.

Dr. John L. Le Conte.

131. *L. polyzona nobis*. Size larger than the three preceding species, body firmly cylindrical; scales large, lanceolate, in twenty-one or twenty-three rows. Head scarcely distinct. Greatest length of vertical plate a little greater than breadth, which latter is a little greater than length of occipital suture. Rostral large, full, postfrontals large, occipitals more elongate than in *micropholis*. One pre- and two postoculars, loreal longer than high; upper labials seven, eye over the third and fourth, first in contact with loreal.\* Inferior labials nine.

Gastrosteges (1) 214, (2) 215; an anal; urosteges (1) 49, (2) 41. Total length (1) 3 ft. 5 in., (2) 3 ft. 3 in. 6 l.; tail (1) 6 in. (2) 5 in. 9 l.

The ground color above and below is bright red; the scales are largely tipped with black. In specimen No. 1 there are twenty-seven pairs of black rings on the body and tail. In a few instances the double rings become confluent, forming an elongate annular spot. The gastrosteges are irregularly spotted with black, and are almost entirely of that color where the rings cross the belly. Specimen No. 2, which we take to be more typical, is ornamented with twenty-eight pairs of rings only three or four scales apart, and perfect on the belly. In both the pairs include a space but one and a half scales wide, of a pale reddish above, more yellow below. A black collar involves the tips of the occipitals and the last superior labial. In front of this a yellow band crosses the occipitals. The rest of the head is black, a few scales with pale borders, which hue predominates on the chin.†

(2) one sp. Quatupe, near Jalapa, Mex.

Mr. Pease.

(1) " Jalapa.

Jno. Cassin, (De Oca coll.)

Var. A. Scales in the rings of the ground color without black tips. Nineteen pairs of rings on the body.

One sp. Mexico.

Mr. Keating.

The var. C of *Coronella doliata*, in Brit. Mus. Catalogue, p. 42, may belong to this species.

*ERYTHROLAMPRUS* Boie. Type *E. venustissimus*,

Isis von Oken 1826, p. 981.

\* This may not be a constant character; in *doliata* it occurs occasionally, but not at all in our specimens of *coccinea*.

† In another specimen of this species, taken in the hills west of Vera Cruz by Dr. Sartorius, and sent to the Smithsonian Institution, Washington, there are 13 rows of scales, and twenty pairs of black rings not separated the width of one scale.

Another specimen in the Museum Smiths. Inst. resembles our var. A—having the scales in twenty-one rows without black tips, and twenty-one pairs of black rings on the body. It differs from it in having no yellow marking whatever upon it, and in the black rings being but one scale and a half wide instead of three, and in the smaller size. The first black ring does not touch the occipital plates, in this resembling the *coccinea*, which differs in having nineteen rows of scales, and yellow rings. The head and plates are broad and short, the scales as in *doliata*, and more lanceolate than in *annulata* Kenn. Though loth to add another to the already difficult series of red *Lampropeltes*, the more we have thought of it the more are we impressed with the belief that this is deserving of recognition as a species. Unite it with any species with which we are acquainted, and the characters which distinguish all the species in the series from *trian-gula* to *micropholis* are invalidated. We propose that it be called *L. amaura*. Locality unknown.

For the opportunity of examining and describing these and other specimens noticed in this paper, in the National Museum of the Smithsonian Institute, Washington, we are indebted to the liberality of its distinguished officers Profs. Henry and Baird.

[June,

132. *E. intricatus* Dum. and Bibr. vii. p. 855.

Var. scales of the white (red or yellow) spaces without black tips.

One sp. S. America, Dr. Neill.

133. *E. venustissimus* Boie, l. c. *Coronella venustissima* Schl. Essai ii. p. 53. *Erythr. venustissimus* Dum. Bibr. vii. 851. Günther Cat. Brit. Mus. 47.

Var. B. Dum. Bibr.

Two sp. S. America, Mr. Cuming in ex.

Var. ? Head black from a single collar forward, except anterior halves of upper labials, which are red. The vertical plate appears to be broader anteriorly than ordinarily, but the specimen is not in sufficiently good state of preservation to offer distinct characters.

One sp. S. America, Dr. Strain.

134. *E. Aesculapii* Wagler, Nat. Syst. Amphib. 187. Dum. et Bibr. vii. p. 845. *Coronella venusta* Schleg. Essai, i. p. 135.

Var. D. Dum. Bibr. l. c. p. 849.

One sp. Surinam, Dr. Hering.

In this specimen twenty-two pairs of reddish brown rings encircle the body from head to tail. These bands are three and a half scales wide and are separated by equal light spaces of one scale in width. It is only on the belly that the former appear in pairs. Head as in the true *Aesculapii*. A species?

Var. *E. nobis*.

The distribution of colors on the head as usual. Twelve pairs of black rings, those of each pair becoming confluent on the middle of the back. The broad interspaces are shaded with brown, which is deeper on the tip of each scale.

This variety (a species?) resembles the C of Dumeril & Bibron, where the rings composing the pairs are separated by a very narrow interval, and the spaces between the pairs are very dark.

One spec. Surinam, Dr. Colhoun.

135. *E. albostolatus nobis*.

Number of the plates of the head the same as in the *venustissimus*. In form, the fifth and sixth upper labials are narrower and higher; and the formulas, vertical, and superciliaries, are broader. The eye is larger, the temporal region more swollen, and the whole head deeper and more obtuse. Rows of scales fifteen. *Gastrosteges*, 167; one divided anal; *urosteges*, 48.

The ground color of the upper and under surface of this serpent is white, as a note made by Mr. Samuel Ashmead, its discoverer, at the time of its capture, informs us. This is crossed on the body, by ten or thirteen black single rings four or five scales wide, and from seven to twelve scales apart. Another ring crosses at the anus, and there are two *double* rings on the tail. The scales in the white intervals are broadly tipped with black. The distribution of color on the head, much as in *E. venustissimus*. There is a broad black collar which crosses the tips of the occipitals and does not encircle the throat. The fifth and sixth upper labials, the first temporal, the tips of the plates adjoining them posteriorly, and a spot on the occipitals, are white. The rostral, first two labials, nasals and loreal are bordered with the same, the rest of the head is black. Chin immaculate.

One specimen. Jijuca, near Rio Janeiro, Mr. S. A. Ashmead.  
One " ? ?

SCOLEOPHIS Fitz. Type *S. atrocinctus*.

Systema Reptilium, 1842, p. 25. *Homalocranion* Dum. & Bibr. viii. 855. Günther, Cat. Brit. Mus. 18.

136. *S. zonatus nobis*. *Elaps zonatus* Hallowell, Journ. Acad. Nat. Sci. New Series, vol. iii. p. 35.

This species is very similar to the *S. atrocinctus* of Chili. It differs 1860.]

in having the seventh superior labial larger than the sixth, and in having four large temporals on each side, of equal size, one smaller above the last labial, and two still smaller at the end of each occipital. The breadth of the head at the temples is equal to the length from the muzzle to the extremity of the occipital suture. There are forty-five black rings on the body and tail, which leave white interspaces, wider upon the back than the flanks. Only the white scales on the latter region are tipped with black. The anal scute is divided.

One specimen. Honduras, Dr. S. W. Woodhouse.

PSEUDOBOLA Schneider. Type *P. coronata*.

Hist. Amphib. Fasc. ii. p. 286, 1801. *Scytale* Boie, Isis, 1826, 981, (not of Merrem.) Wagler, Natur. Syst. 187. Dum. & Bibr. vii. p. 996. Günther, Cat. Brit. Mus. 187. *Olisthenes*, Cope, Proc. Acad. Nat. Sci. 1859, p. 296.

Schneider's name for this genus possesses the right of priority over that of Merrem. The almost universal acceptance of the latter by herpetologists, is also the more to be regretted as the type is not known. The relative number of the gastro- and urosteges in the *Scytale anguiformis* of Merrem renders its identity with *Erythrolamprus venustissimus* very improbable.

137. *P. coronata* Schneider. *Scytale coronatum* Boie, Wagler, Dum. & Bibr. Günther, etc. *Lycodon cloelia*, var. Schl.

One specimen. Caraccas, Mr. W. G. Bolton.  
One " Panama, Drs. Gallaer and LeConte.

138. *P. Neuwiedii nobis*. Dum. & Bibr., vii. p. 1001, *Olisthenes enphaeus* Cope, l. c.

One specimen. S. America, Ed. D. Cope.

OXYROPUS Wagler. Type *O. petolarius*.

Natur. Syst. Amphib., 1830, p. 185. *Hydroscoptes* et *Deiropeda* Fitz. Syst. Rept. 1843, p. 26. *Brachyruton* Dum. & Bibr. vii. p. 1004, 1854.

139. *O. plumbeus* Gthr. *Coluber plumbeus* Wied. Abbild. xii. pl. 6. *Duberria* (1824) et *Hydroscoptes* (1843) *plumbeus* Fitz. *Brachyruton plumbeum*, D. et B.

One specimen. Cayenne, Gard. plants in ex.  
One " Surinam, Dr. Hering.  
One " ? Dr. Wilson.  
One " Trinidad, Dr. Watson.

140. *O. melanocrotaphus nobis* This serpent resembles the *O. cloelia*, but may be distinguished from it, first, by the form of the head and the distribution of colors on it (second), and third, by the relative length of the tail.

The profile of the muzzle is very rounding and obtuse, and its sides nearly plane; the head is deep. Eight upper labial plates, third, fourth and fifth, entering the orbit. Loreal large, as high as long. Anterior border of the vertical plate not greater than the length of the lateral borders. The latter are slightly concave, and scarcely or not at all convergent. Three temporals on the exterior border, the first twice as large as the second, and bounding the sixth and seventh upper labials. Preocular large; one narrow postocular, which will probably be found to be divided in other specimens. Inferior labials eight. Geniials two pair, broad. Scales in nineteen longitudinal rows. Gastrosteges 161, one entire anal, urosteges 45. Total length 25 in. 9 lines. Tail 4 in. 1 l., less than one sixth of total length; in *cloelia* it is a little more than one fifth.

*Coloration*. The whole upper surface of the body and tail is of a pale yellowish or brownish gray, many scales with one or two borders pure white.

[June,

The plates of the head and chin are of a deeper tint, possibly red in life. Parts of the post-ocular and sixth and seventh superior labials, the whole of the eighth labial and the temporals, are covered by a black spot on each side, which unites upon the nape of the neck with that of the opposite side. One specimen, locality and donor unknown.

141. *O. cloelia* *Gthr.* *Coluber cloelia* Daudin. *Clelia Daudinii* Fitz. 1826. *Cloelia occipitalis* Wagl. 1830. *Deiropeda cloelia* Fitz. 1843. *Brachyruton cloelia* Dum. & Bibr. 1853.

One sp.	Surinam.	Dr. Hering.
One "	Cocuyas de Veraguas N. Grenada.	Mr. R. W. Mitchell.
One "	Isth. of Panama.	Drs. Gallaer and LeConte.
One "	Caraccas.	Dr. Morris.

142. *O. immaculatus* *Dum. & Bibr.* vii. 1029.  
Two sp. S. America. Capt. Jameson.

143. *O. petolaris* *Wagler.* *Dum. & Bibr.* vii. 1033.  
One sp. Surinam. Dr. Hering.  
One " (young) ? ?

Var. The black bands occasionally dividing, alternating and becoming confluent on the back. The loreal plate entering the orbit.

One half grown spec. Is. of Panama. Drs. Gallaer and LeConte.

144. *O. trigeminus* *Dum. & Bibr.* vii. 1013. *Lycodon formosus* Schl.  
One sp. Bahia. Gard. Plants in ex.  
One " S. America. Dr. Wilson, (Bp. Coll. pres. by Dr. DeKay.)

#### LYCODONTINÆ.

*Boödon* *Dum. & Bibr.* Type *B. unicolor*.

*Erpetologie Generale*, vii. p. 357, 1854.

145. *B. virgatus nobis.* *Coelopeltis virgata* Hallowell, *Proc. Acad. Nat. Sci.* vii. p. 98, 1854. *Boödon nigrum* Fischer, *Abhandl. aus dem Gebiete der Naturwissensch.* Hamburg, iii. 91, 1856. ? *Boödon capense* A. Duméril, *Rev. et Mag. de Zoologie* 1856, 464. *Boödon quadrivirgatum* Hallow. *Proc. Phila. Acad.* 1857, p. 56.

Four sp.	Gaboon.	Dr. Ford.
One "	Liberia.	Mr. E. T. Cresson.

Our specimens correspond exactly with the description of Dr. J. G. Fischer, so that we have no doubt as to their belonging to the same species. Prof. Duméril loc. sup. cit. identifies the *Coelopeltis virgata* of Hallowell with the *Boödon capensis* D. & B., and there is a possibility that the specimen received by him from the Acad. Mus. belongs to the latter species. Our specimens, however, presented by Dr. Ford, and subsequently described by Dr. Hallowell as *B. quadrivirgatum*, and stated by him to be identical with his *C. virgata*, cannot be identified with the *B. capense*. The former has twenty one and twenty-three longitudinal rows of scales, the later twenty-nine or thirty-one.

146. *B. quadrivittatus* *Hallowell*, *Proc. Acad. Phila.* 1857, p. 54.  
One sp. Isles de Los (off Sierra Leon.) Dr. Burt, U. S. N.

A fine species, resembling probably the *Capense*, but with twenty seven rows of scales and a different disposition of the bands on the muzzle.

*Lycophidion* *Fitz.* Type *L. Horstokii*.

*Syst. der. Rept.* p. 27.

147. *L. laterale* *Hallowell*, *Proc. Acad. Nat. Sci.* 1857, p. 58.

A *Lycophidion* with the coloration of a *Boödon*. The pupil is round; the anterior nasal plate almost reaches the edge of the lip, and wants but little of meeting its fellow over the rostral.

One sp.	Gaboon.	Dr. H. A. Ford.
---------	---------	-----------------

1860.]

HORMONOTUS Hallowell. Type *H. audax*.

Proc. Acad. Nat. Sci. Phila. 1857, p. 56.

A genus agreeing with *Lamprophis Fitz.*, in having a larger series of vertebral scales, but differing in the elongated compressed body, and angular gastrosteges.

148. *H. audax* Hallow. l. c.

One sp.

Gaboon.

Dr. H. A. Ford.

The form of the body, and color of this species, bear some analogy to those of the *Boiga pulverulenta*, just as the *Boödon*s and *Lycophidion*s resemble the *Brachycranion* and *Atractaspis*. The subject of the prevalence of peculiar shades and arrangement of colors, throughout certain geographical districts, is one of much interest to the zoologist. The smoky and fuscous colors of the serpents just alluded to are repeated among birds in the *Nectarinia fuliginosa*, the genera *Andropadus*, *Drymoeca*, *Artemyias*, etc. The *Euprotodon* (*Lycodon*) of the East Indies in the distribution and often in the shade of its colors, resembles very much the venomous *Bungarus* and *Elaps* (*Calliophis*) of the same countries.

The *Elaps* of South America is represented in the same region by the black and red-ringed *Oxyrhopes*, the *Erythrolamprus*, *Pliocercus*, *Lampropeltis* etc.

? *Lycodon* Boie. Type *L. aulicus*.

Isis, 1827, p. 551, num p. 521? Schlegel (pars) Ess. ii. p. 106. Fitzinger, Neue Class. p. 29. Dum. et Bibr. vii. p. 367. Günther l. c. p. 201.

We have strong doubts of the propriety of retaining the name *Lycodon* for this genus, inasmuch as Boie first proposed it for the *Colubariaudax* Linn. a species of widely different affinities. Fitzinger in the "Neue Classification" removed this species to the genus *Dipsas*, rightly estimating the differences between it and those for which he retained the name *Lycodon*. He afterwards ("Systema Reptilium," p. 29,) made the same species the type of his genus *Siphlophis*. Duméril l. c. p. 354, follows Fitzinger in the application of the name *Lycodon*, and quotes Boie's original diagnosis as more particularly appropriate to the *C. aulicus* and congeners. As however Boie says "dentes colubrini" of the *Psammophis* and *Dipsas*, it must be equally appropriate to the *C. audax*. This latter species is the type of *Lycognathus* Dum., fam. *Anisodontiens*, *Opisthoglyphes*.

In deference to authority we propose no change; but if herpetologists should ever see fit to apply the name *Lycodon* to the *Lycognathus scolopax* (= *audax*) of Duméril, the present genus might be appropriately called *Euprotodon*, and the subfamily *Euprotodontinæ*.

149. *L. aulicus* Boie l. c. Dum. & Bibr. vii. p. 369. *L. hebe* Schleg.

Var. A., Dum. &amp; Bibr.

One sp.

?

Mr. R. Oakford.

Var. B., Dum. &amp; Bibr.

One sp.

India.

Dr. Burroughs.

One "

"

Gard. of Plants in ex.

Var. F., Dum. &amp; Bibr.

One sp.

Java.

Dr. Ruschenberger.

Seven sp.

Philippine Is.

Mr. Cuming in ex.

*EUMESODON* nobis. Type *E. semicarinatus*.

Palatine teeth of equal length. Mandibular teeth in a continuous series, much longer and stronger anteriorly. Superior maxillary teeth in two slightly separated series, those of the anterior long, but increasing regularly in length posteriorly; the posterior small in front, but terminating in one or two very long, trenchant, smooth teeth.

Form elongate, stout; tail short; gastrosteges bent on the flanks. Head

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distinct, the shields broad ; muzzle prominent. Two nasals, two postoculars, one preocular, the loreal sometimes reaching the orbit beneath it. Scales either smooth or partially carinate. Pupil elliptical.

The serpents for which we propose this name are colubrine in form, but possess a peculiar dentition, most resembling that of *Dinodon* and *Odontomus Dum. & Bibr.* From both these forms they differ in having the anterior palatines no longer than the posterior (*i. e.* pterygoids), and the posterior superior maxillaries abruptly longer than the three or four which precede them.

150. *E. semicarinatus nobis.* Head depressed, conic, the width at the eighth labial plate less than half the length. Muzzle rounded conic, prominent, acute in profile. Pupil? Body cylindrical, tail one-fourth of total length. Scales short, obtuse, in seventeen longitudinal rows ; anteriorly smooth, near the middle of the body three or four rows, and finally seven or eight, having distinct keels on the anterior half of each scale. Those of the tail smooth. No larger vertebral series. Rostral plate exhibiting a large crescentic inferior surface ; superior surface large, presenting an obtuse angle between the prefrontals. Postfrontals three times the size of the prefrontals. Vertical broad, short, pentagonal, the anterior border greater than the lateral, and equal to the greatest length of the plate. Superciliaries not acute in front. Occipitals elongate, not bifurcate, bordered by two large temporals on each side. The anterior of these is narrow, and separated from the sixth and seventh labials by a broader and shorter plate, both in contact with the postoculars. The posterior is broad, and bordered by two others on its postero-inferior border.

Superior labials eight, third, fourth and fifth entering the orbit. Two post-one preocular. Loreal low, elongate, acute behind, not reaching the orbit. Nasal plates two, nostril large. Inferior labials ten, genials two pair.

*Coloration.* Above yellowish brown, crossed by forty-two large black spots. The scales which fall in the border of each spot are absolutely black, but those enclosed have a large central spot of the ground-color. The latter appears above as light transverse bands one scale wide. There are seventeen spots on the tail, darker than those of the body. Head above brownish black, continuous with the first dorsal spot. From the posterior extremity of each occipital plate a yellowish band proceeds outwards and backwards, uniting with an area of the same color which extends from the throat upon the sides of the neck. In the centre of this area is a brownish black spot. Spottings of yellowish on the temporal plates form an irregular postocular band, and another equally indefinite and irregular extends from the eye round the muzzle. Superior labials (except their edges) chin, throat, belly and under surface of tail brownish yellow. The ends of the gastrosteges on the flanks, partly included in a series of spots which alternate with the larger ones of the back. Urosteges spotted with blackish. Gastrosteges 221 ; one entire post-abdominal ; urosteges 92 pair. Total length, 37 inches ; the tail 9 in. 3 lines. One specimen, captured by Mr. Heine of the U. S. Japan expedition at Loo Choo, presented by the Smithsonian Inst.

151. *E. striatus nobis.* *Coronella striata* Hallowell, Proc. Acad. Nat. Sci. 1856, p. 152.

This serpent resembles the preceding in many points—remarkably in the dentition—yet presents differences which may at some time be regarded as generic. The entrance of the loreal plate into the orbit, the smooth scales, with the vertebral series slightly larger, and the elliptic pupil, approximate it to the *Dinodon cancellatum Dum. & Bibr.* In the palatine and superior maxillary teeth the differences are of a kind which would be considered generic by the authors of the *Erpetologie Generale.* In specific characters there is much resemblance, but our serpent has fewer urosteges, there being 70 to 193 gastrosteges ; in the *Dinodon*, 168 to 194. The spots above are reddish brown, not black ; and the belly is not punctulated posteriorly.

We at one time thought that our specimen belonged to the *Lycodon rufum* 1860.]

*zonatus* Cantor, Ann. et Magaz. Nat. Hist. 1842, p. 483, and that long immersion in spirits had destroyed the lighter colors. We now believe the animals to be distinct, but nearly allied.

Two specimens and head.

Ningpo.

Dr. McCartee.

#### DIPSADINÆ.

BOIGA Fitzinger. Type *B. irregularis*.

Neue Class. der Reptilien, pp. 29, 60, 1826. *Triglyphodon* Duméril, Prodrome de la Class. Ophid. p. 111, 1852. Erp. Gen. vii. p. 1069, 1854. *Dipsas* Schleg. Essai, ii. p. 257, 1837. Fischer, Abhdl. aus Gebiete Wissensch. Hamb. iii. p. 81, 1856. Günther, Cat. Brit. Mus. p. 169, 1858, (not of Laurenti, 1768.) *Gonyodipsas*, *Cephalophis* et *Macrocephalus* Fitz. Syst. Rept. 27, 1843. *Toxicodryas* Hallow. Proc. Acad. Nat. Sci. Phil. 1857, p. 60.

This is the genus *Dipsas* as understood by Günther l. c. We have, however, not followed this author in the application of a name, since that employed by him was given to another and allied form, long previously. Some time subsequent to the first use of *Dipsas*, the present genus received the barbarous appellation of Boiga (!). This we would gladly resign in favor of *Triglyphodon* Duméril, but dates are inexorable. *Vae senioribus*.

152. *B. dendrophila nobis*. Dum. Bibr. l. c. p. 1086. *Dipsas dendrophila* Reinw. et auctorum.

One sp.

Java.

Garden of Plants.

153. *B. Blandingii nobis*. *Dipsas Blandingii* Hallowell, Proc. Acad. Nat. Sci. Phila. ii. p. 170, 1844. *Triglyphodon fuscum* Dum. Bibr. vii. p. 1101, 1854, (not *B. fusca*. = *Dendrophis fusca* Gray, Zool. Misc. 1842, p. 54). *Dipsas valida* Fischer, loc. cit. 1856. Gthr. loc. cit. p. 172, 1858. *Toxicodryas Blandingii* Hallow. loc. cit. p. 60, 1857. Our specimens of this fine and interesting dipsadien agree very nearly with the description and figures of Fischer. The two preoculars and divided anal shield are striking characters,\* and it exhibits a relationship to *Ophiodon* Dum. and Bibr. in its elongate anterior maxillaries. On these peculiarities, but especially from the fact that our specimens have but a single grooved tooth on each side, Dr. Hallowell proposed his genus *Toxicodryas*. The latter character is, however, inconstant, for Fischer states that his specimen had two such teeth on each side, and Duméril, that his had three. The elongation of the anterior maxillary and palatine teeth does not appear to us sufficiently distinctive to afford generic characters, nor are the other peculiarities of sufficient importance.

154. *B. pulverulenta nobis*. *Dipsas pulverulenta* Fischer, Abhandl. der Naturwissensch. in Hamburg, ii. p. 81. Taf. iii. f. 1. Günther, Cat. Brit. Mus. p. 173.

One sp.

Liberia.

Mr. E. T. Cresson.

A beautiful specimen, having the lateral spots obsolete anteriorly. There is in this species, also, but one grooved superior maxillary.

155. *B. multimaculata nobis*. *Dipsas multimaculata* Reinw. et Auctorum. Erp. Gen. vii. p. 1139.

One sp.

Java.

?

HIMANTODES Dum. & Bib. Type *H. cenchoa*.

Erp. Gen. vii. p. 1064. *Dipsas* Boie, Isis, 1827, p. 521. Fitzinger, Syst. Rept. 27, 1843.

This genus unites the short, flat head of the true *Dipsas*, (*Leptognathus* D. & B. Gthr.) with the dentition of the preceding genus. The tail is very long and slender.

156. *H. cenchoa* Dum. & Bibr. vii. p. 1065. *Coluber cenchoa* Linn. *Dipsas*

\* Also possessed by *Boiga globiceps* = *Dipsas globiceps* Fisch. l. c.

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*cenchoa* Wied. Boie, Wagler, Günther l. c. p. 174. *Dipsas Weigeli* Schleg. ii. p. 278. Fitz. Syst. Rept., p. 27.

One sp. Near Isalco, San Salvador. Capt. J. M. Dow.

Our specimen has the preoculars united, which peculiarity appears to be not uncommon. The dorsal spots connected by a narrow, often irregular brown vitta.

TRIPANURGUS Fitz. Type *T. leucocephalus*.

Systema Reptilium. 1843, p. 27.

157. *T. leucocephalus* Fitz. *Coluber leucocephalus* Mikan. *Col. compressus* Oppel. *Dipsadomorphus compressus* Fitz. *Dipsas leucocephalus* Schleg. *Lycognathus leucocephalus* Dum. & Bibr. *Eudipsas leucocephalus* Gthr.

One sp.

?

?

DIPSAS Laurenti. Type *D. Indica*.

Specimen Synopsis Reptilium, p. 89, 1768. *Dipsadomorus*, *Petalognathus* et *Leptognathus* Dum. & Bibr. vii. pp. 463, 477, 1854. *Leptognathus* Günther, Cat. Brit. Mus., p. 177, 1858. *Pholidotæmus Sibynomorphus* et *Sibynon* Fitz. Syst. Rept., 27, 1843.

The genus *Dipsas* has been variously understood and defined by herpetological authors. As four distinct groups have been designated by this name, in order to avoid further confusion we have employed it for that to which it was first applied. In the Synopsis Reptilium of Laurenti, which bears date 1768, the name was first proposed, with an appropriate "character," and *D. Indica Laur.* was indicated as the typical and only species. In 1852 Duméril made the same species the type of his genus *Dipsadomorus*, and in 1858 Günther placed it in *Leptognathus Dum.* We next find the genus *Dipsas* characterized at length by Boie in his invaluable contribution to herpetology, in the Isis von Oken for 1827, and *D. cenchoa* assigned as the type. This species is the *Himantodes* of Duméril, 1852. In the Regne Animal, 1829, we find the genus as proposed by Laurenti retained, and of all modern authors Cuvier is the only one who does so. In 1830 the *Natürlich System der Amphibien* of Wagler appeared. Here *Dipsas dendrophila Rein.* is considered typical of the genus; and in this he is followed by the great ophidiologist Schlegel, in the "Essai," in 1837. The group of which this species is a typical example was named *Triglyphodon* by Duméril in 1852, but is the *Boiga* of Fitzinger, 1826.

Fitzinger, in the Systema Reptilium, 1843, cites *Dipsas cenchoa*, ("Weigeli") as the type of the genus, following Boie. Philippo de Philippi, in the Catalogue of Serpents in the Museum of the University of Pavia, 1849, follows Wagler and Schlegel.

In the Prodrôme de la Classification des Reptiles Ophidiens, vol. xxiii, of the memoirs of the French Academy, 1852, and afterward in the Erp. Generale, Duméril considers *Dipsas trigonata* the type of the genus. In 1843, Fitzinger proposed *Dipsadomorphus* for the same species. Finally, in 1858, in the Catalogue of Colubrine Snakes in the British Museum, Dr. Günther places *D. multimaculata* first among the species, and so characterizes the genus as to be nearly coextensive with *Triglyphodon*, Duméril, including also *Himantodes* of the latter.

Believing the genera of *Dipsadinae* as defined by Günther, to be, on the whole, more natural than those of other authors, we have adopted them here, simply employing the name *Dipsas* for that called by him *Leptognathus*, and *Boiga* for his *Dipsas*.

158. *D. nebulata* Boie, l. c. *Coluber nebulatus* Linn. 1754, *Col. variegatus* Hallow. Proc. Acad. Nat. Sci. Phila. ii. p. 244, 1845. *Dipsas nebulata* Schleg. Essai, ii. p. 275. *Sibynon nebulata* Fitz. l. c. *Petalognathus nebulatus* Dum. & Bibr., l. c. *Leptognathus nebulatus* Günther, l. c.

One specimen.

Surinam,

Dr. Hering.

One

"

Dr. Colhoun.

Two

Near Caraccas,

Mr. Ashmead.

1860.]

17

159. *D. pavonina* Cuvier, MSS., Schlegel, Essai, ii. p. 280. *Leptognathus pavoninus* Dum. & Bibr. vii. p. 474, Günther, l. c. 179.

One specimen, S. America. ?

160. *D. brevis nobis*. *Leptognathus brevis* Dum. & Bibr. vii. p. 476.  
One specimen. Cocuyas de Veraguas, New Grenada, R. W. Mitchell.

Our specimen of this rare species has but one preocular plate; its form too, is no less slender than that of our *D. pavonina*, which, however, may not be fully grown. Otherwise it coincides with the description cited. The dark brown of the upper surface of the head is marked with small, irregular spots of white.

SIBON Fitzinger. Type *S. annulata*.

Neue Classification der Reptilien, 1826, p. 60. *Leptodeira* Fitz., Systema Reptilium, 27, 1843. Günther, Cat. Brit. Mus. p. 165.

161. *S. annulata* Fitz. l. c. *Coluber annulatus* Linn. *Dipsas annulata* Schleg. Essai, ii. p. 294, Dum. & Bibr., vii. 1141. *Leptodeira annulata* Fitz. et Gthr. l. c.

*Scales in nineteen or twenty-one rows.*

a. With an undulating dorsal band. Var. A. Dum. & Bibr.

Six specimens. Surinam, Dr. Hering.

b. With isolated, sometimes geminate spots. Var. B. Dum. & Bibr.

Five specimens.	Caraccas,	Mr. Ashmead.
One "	"	W. G. Bolton.
One "	Isth. Panama.	Dr. LeConte.
Four "	S. America,	Mr. H. Cumming, in ex.

*Scales in twenty-three rows.*

Two specimens.	Honduras,	J. S. Hawkins & Dr. LeConte.
One "	Near Volcano Isalco, San Salvador,	Capt. John M. Dow.
One "	Xalapa,	John Cassin, Esq. (De Oca coll.)
Two "	?	?

There is much difference in the appearance of the specimens of this species which come from the extreme points of distribution represented in our collection, viz. Surinam and Xalapa. As has been observed by authors, those from the more southern localities, have more slender bodies and tails, and hence, fewer longitudinal rows of scales, and the head is more distinct. The whole "physiognomy" is more that of the arborial *Dipsadiens*. This is more striking in a specimen where the vertebral rows of scales in places is slightly, but distinctly larger than the others. From the Stomach of a Surinam specimen we took an adult *Hyla*; from one from Caraccas, a *Thecadachylus rapicaudus*.

Specimens from Mexico exhibit a stouter, heavier form of body, a greater number of longitudinal rows of scales, and a shorter tail. They seldom, if ever, have the dorsal spots confluent into a *band*, strictly speaking, as in the var. A. Dum. & Bibr. Their aspect is that of a terrestrial species.

That these forms are really distinct species, is possible, but it could only be demonstrated with large series of specimens from carefully ascertained localities, if at all. Some of the specimens from Caraccas and Panama, are very intermediate as respects the peculiarities mentioned.

*Dipsas septentrionalis* Kennicott, (Mexican Boundary Survey, ii. Reptiles, p. 16, pl. viii. fig. 1,) belongs to this genus. The grooving of the posterior upper maxillaries is not represented in the fig. 2, pl. 22, l. c. It seems to resemble northern forms of *S. annulata*; but has the nasals and prefrontals differently proportioned, etc. It has three preoculars but we not unfrequently find one or more supplementary preoculars in the *annulata*.

[June,

## Synonymy of the Cyclades, a family of Acephalous Mollusca. Part 1.

BY TEMPLE PRIME.

Family CYCLAS, Fer.

*Genera.*

GALATEA, Brug.

*Pectunculus*, Lister. *Venus*, Chemn. *Donax*, Perry. *Tellina*, Dillwyn. *Chama*, Favanne. *Egeria*, De Roissy. *Megadesma*, Bowditch. *Potamophila*, Sowerby. *Galateola*, Fleming. *Trigona*, Schum.

GLAUCONOME, Gray.

*Solen*, Linn. *Glaucomya*, Bronn.

CYPRINA, Lamk.

*Pectunculus*, Lister. *Cardia*, Olafsen. *Venus*, Linn. *Arctica*, Schum.

VELORITA, Gray. 1834.

*Cyrena*, Valenc. 1838.

CORBICULA, Megerle. 1811.

*Tellina*, Müller, 1774. *Venus*, Chemn. 1782. *Cyclas*, Brug. 1792. *Cyrena*, Lamk., 1818. *Venulites*, Schl., 1820.

CYRENA, Lamk. 1818.

*Venus*, Chemn., 1769. *Cyclas*, Brug., 1792. *Cyanocyclas*, Fer., 1818. *Poly-mesoda*, Rafin., 1820. *Mactra*, Brongt., 1823. *Geloina*, Gray, 1844.

BATISSA, Gray. 1854.

*Cyprina*, *Cyclas*, Brug., 1792. *Cyrena*, Lamk. 1818.

SPHÆRIUM, Scopoli.

*Pectunculus*, Lister, 1685. *Musculus*, Gualt. 1742. *Tellina*, Linn., 1758. *Sphærium*, Scop., 1777. *Cardium*, Da Costa, 1778. *Cyclas*, Brug., 1792. *Nux*, Humphr. 1797. *Musculium*, Link. 1807. *Cornea*, *Pisum*, Megerle. 1811. *Corneocyclas*, Fer., 1818. *Amesoda*, Rafin., 1820. *Pisidium*, Verany, 1846. *Cycladites*, Krug, 1848.

PISIDIUM, Pf. 1821.

*Pectunculus*, List., 1685. *Musculus*, Gualt., 1742. *Tellina*, Müller, 1774. *Sphærium*, Scop. 1777. *Cardium*, Poli. 1791. *Cyclas*, Lamk. 1818. *Pera*, *Euglesia*, *Cordula*, Leach, 1820. *Physemoda*, Raf., 1820. *Gallileja*, Da Costa, 1839. *Pisum*, Gray, (non Megerle), 1847. *Musculium*, Gray, (non Link), 1851.

*Species.\**

VELORITA, Gray.

1. *V. Cyprinoides*, Gray. Grif. Cuvier, pl. 31, f. v. 1834.  
*Cyrena Cyprinoides*, Gray. Ann. Phy. n. ser. ix. 136. 1825.  
*C. recurvata*, Valenc. Mag. Zool. pl. 119, f. 2. 1838.  
*C. Gaudichaudii*, Valenc. Loc. sub. cit. pl. 119, f. 2. 1838.  
 Hab. Philippines.

CORBICULA, Megerle.

1. *C. acutangularis*, Desh.  
*Cyrena acutangularis*, Desh. Inv. Par. 517, pl. 38, f. 17, 18. 1857.  
 Hab. France, (fossil.)

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\*The synonymy of the species of *Galatea*, *Glaucnome* and *Cyprina*, will be given at some future period; that of the species of *Batissa* and *Pisidium* will be found in the Annals of the Lyceum of N. H., of New York, vol. vii. 1860.]

2. *C. Africana*, Adams. Ad. Rec. Gen. 2, 447. 1858.  
*Cyrena Africana*, Kr. Moll. S. Afr. 8, pl. i. f. 9. 1848.  
*C. Gauritziana*, Kr. In litt. 1848.  
 Hab. Africa.
3. *C. Agrensis*, Prime.  
*Cyrena Agrensis*, Kurr. in litt.  
 Hab. India.
4. *C. Alpina*, Prime.  
*Cyrena Alpina*, Bgt. Sph. fr. 49. 1854.  
*Cyclas Alpina*, d'Orb. Prod. 2, 381. 1851.  
 Hab. France, (fossil.)
5. *C. ambigua*, Desh. Proc. Zool. xxii. 345. 1854.  
 Hab. Euphrates.
6. *C. amygdalina*, Desh.  
*Cyrena amygdalina*, Desh. Inv. Par. 500, pl. 37, f. 22, 23. 1857.  
 Hab. France, (fossil.)
7. *C. angusta*, Desh.  
*Cyrena angusta*, Desh. Inv. Par. 508, pl. 37, f. 9-12. 1857.  
 Hab. France, (fossil.)
8. *C. antiqua*, Prime.  
*Cyrena antiqua*, Fer. Moll. terr. et fluv. f. 5.  
*Cyclas antiqua*, d'Orb. Prod. 2, 304. 1854.  
 Hab. France, (fossil.)
9. *C. Arnoudii*, Prime.  
*Cyrena Arnoudii*, Pot et Mich. Gal. Moll. 2, 192, pl. 61, f. 15, 16. 1838-44.  
 Hab. France, (fossil.)
10. *C. Arveniensis*, Desh.  
*Cyrena Arveniensis*, Desh. Trait. Elem. Conch. 2, 698. 1843-50.  
*C. pisum*, Desh. Bouillet, Cat. 157. 1836.  
 Hab. France, (fossil.)
11. *C. Australis*, Desh.  
*Cyclas Australis*, Lam. Lam. v. 560. 1818.  
*Cyrena Australis*, Desh. Encycl. Méth. 2, 50. 1830.  
 Hab. Asia.
12. *C. Bengalensis*, Desh. Proc. Zool. xxii. 344. 1854.  
 Hab. Bengal.
13. *C. Bensoni*, Desh. Proc. Zool. xxii. 345. 1854.  
 Hab. Bengal.
14. *C. Bouillettii*, Desh.  
*Cyrena Bouillettii*, Desh. Trait. Elem. Conch. 2, 698. 1843-50.  
*C. depressa*, Desh. Bouillet, Cat. 156. 1836.  
 Hab. France, (fossil.)
15. *C. Brasiliana*, Adams. Ad. Rec. Gen. 2, 447. 1858.  
 Hab. Brazil.
16. *C. breviuscula*, Desh.  
*Cyrena breviuscula*, Desh. Inv. Par. 503, pl. 36, f. 9-11. 1857.  
 Hab. France, (fossil.)
17. *C. Britannica*, Desh.  
*Cycles deperdita*, Lam. Park. Org. Rem. 3, 189, pl. 13, f. 8. 1811.  
*Cyrena subdeperdita*, Morris. Cat. Brit. fossils 86. 1843.  
*Cyclas subdeperdita*, d'Orb. Prod. 2. 305. 1850.

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- Cyrena Britannica*, Desh. Inv. Par. 501. 1857.  
Hab. Engl. (fossil.)
18. *C. brunea*, Prime. In litt. 1860.  
Hab. Scamander River.
19. *C. Cashmiriensis*, Desh. Proc. Zool. xxii. 344. 1854.  
Hab. Cashmyr.
20. *C. Chilensis*, Prime.  
*Cyclas Chilensis*, d'Orb. Voy. Amer. 568, pl. 83, f. 11-13. 1846.  
*Musculium Chilense*, d'Orb. Ads. Rec. Gen. 2, 451. 1858.  
*Pisum Chilense*, d'Orb. Loc. sub. cit. 2, 460. 1858.  
Hab. Chili.
21. *C. compressa*, Mousson. Ads. Rec. Gen. 2, 447. 1858.  
Hab?  
—*C. consobrina*, Adams. Rec. Gen. 2, 447. [1858. Is *Corbicula*  
cor Adams.
22. *C. convexa*, Desh. Proc. Zool. xxii. 342. 1854.  
Hab. Central America.
23. *C. cor*, Adams. Rec. Gen. 2, 447. 1858.  
*Cyrena cor*. Lam. Lam. v. 552. 1818. Delessert pl. vii. f. 7. 1841.  
*C. consobrina*, Caillaud. Voy. Méroé iv. 263, t. 2, pl. 61, f. 10-11.  
1826.  
*Cyclas consobrina*, Caillaud, Caltow and Reeve, 29. 1845.  
*Corbicula consobrina*, Adams. Rec. Gen. 2, 447. 1858.  
Hab. Asia.
24. *C. crassa*, Desh.  
*Cyrena crassa*, Desh. Coq. Foss. Par. 1, 119, pl. 18, f. 14, 15. 1824.  
*C. spissa*, Desh. Loc. sup. cit. p. 9, pl. 18, f. 14, 15. 1824.  
*Cycles crassa*, d'Orb. Prod. 2, 422. 1850.  
Hab. France, (fossil.)
25. *C. crassula*, Prime.  
*Cyrena crassula*, Mousson. Mous. Cat. Bellardi. p. 54. f. 12. 1854.  
Hab. Tigris River.
26. *C. Cumingii*, Desh.  
Hab. Philippines.
27. *C. cuneata*, Adams. Rec. Gen. 2, 447. 1858.  
*Cyrena cuneata*, Jonas. Zeit. Malak. 186. 1844. Phil. Abb. 2, 77. pl. i.  
f. 6. 1846.  
*C. globulus*, Jonas. In litt.  
Hab. Orinoco.
28. *C. cuneiformis*, Prime.  
*Cyrena cuneiformis*, Ferussac. Moll. Terr. Fluv.  
*Cyclas cuneiformis*, Sowb. M. Conch. 2, 140, pl. 162, f. 2, 3. 1818.  
*Cyrena donacialis*, Desh. Dict. class h. n. v. 290. 1824.  
*C. donaciformis*, Anton. Verz. 1839.  
Hab. Europe, (fossil.)
29. *C. cycladiformis*, Desh.  
*Erycina lævis*, Lam. Ann. Mus. v. 413. 1805.  
*Cyrena cycladiformis*, Desh. Coq. Foss. Par. 1, 121, pl. 19, f. 7-9. 1824.  
*Cycles cycladiformis*, d'Orb. Prod. 2, 381. 1850.  
Hab. Europe, (fossil.)
30. *C. debilis*, Prime.  
*Cyrena debilis*, Gould. Bost. Proc. 3, 293. 1850.  
Hab. N. Guinea.
- 1860.]

31. *C. deperdita*, Desh.  
*Cyclas deperdita*, Lam. Ann. Mus. vii. 421. 1806.  
*Cyrena deperdita*, Desh. Cog. Foss. Par. 1, 118, pl. 19, f. 14, 15. 1824.  
 Hab. France, (fossil.)
32. *C. Deshayesii*, Prime.  
*Cyrena Deshayesii*, Hébert. Bull. Soc. Géol. Fr. 2d. n. v. 401. f. a. b. 1848.  
 Hab. France, (fossil.)
33. *C. Duchasteli*, Nyst. Bull. Brux. xv. 114, f. 1-4. 1838.  
*Cyrena trigonula*, Wood. Ann. Mag. n. h. vii. 275, f. 45. 1841.  
 Hab. Europe, (fossil.)
34. *C. Ferrussaci*, Prime.  
*Cyrena Ferrussaci*, Math. Cat. Méth. 149, pl. xiv. f. 14, 15. 1842.  
*Cyclas Ferrussaci*, d'Orb. Prod. 3, 19. 1852.  
 Hab. France, (fossil.)
35. *C. fluminalis*, Adams. Rec. Gen. 2, 447. 1858.  
*Tellina fluminalis*, Müller. Verm. 2, 205. 1774.  
*T. fluviatilis*, Müller. Loc. sup. cit. 2, 206. 1774.  
*Venus fluminalis*, Chemn. vi. pl. 30, f. 320. 1782.  
*V. fluviatilis*, Chemn. Loc. sup. cit. pl. 30, f. 321. 1782.  
*Cyclas Euphratica*, Lam. Ann. Mus. vii. 420. 1806. Encycl. pl. 301, f. 2, pl. 302, f. 1, 2.  
*C. fluviatilis*, Bosc. 3, 38. 1802.  
*C. lævigata*, Schum. 170, pl. xii, f. 1. 1817.  
*Cyrena fuscata*, Lam. Lam. v. 552. 1818.  
*C. Euphratica*, Bronn. Syst. Urwelt. pl. iv. f. 10.  
*C. orientalis*, Lam. Phil. Abb. 2, 75, pl. 1, f. 2. 1846. Mousson, Moll. Java 86, pl. xv. f. 2. 1849.  
*Corbicula fuscata*, Cantor. Proc. Zool. x. 124. 1852.  
*Cyrena fluminalis*, Bgt. Cat. Sauley 79. 1853.  
*Corbicula fluviatilis*, Adams. Rec. Gen. 2, 447. 1858.  
 Hab. Asia.
36. *C. fluminea*, Adams. Rec. Gen. 2, 447. 1858.  
*Tellina fluminea*, Gml. 3243. 1788. Müller, Verm. 2, 205. 1774.  
*Venus fluminea*, Chemn. vi. 321, pl. 30, f. 322-23. 1782.  
*Cyclas Chinensis*, Lam. Ann. Mus. vii. 421. 1806.  
*C. fluminea*, Bosc. 3, 38. 1802.  
*Cyrena fluminea*, Lam. Lam. v. 553. 1818. Phil. Abb. 2, 76, pl. 1. f. 3. 1846.  
 Hab. China.  
 —*C. fluviatilis*, Adams. Rec. Gen. 2, 447. 1858, is *Corbicula fluminalis*, Adams.
37. *C. Forbesii*, Desh.  
*Cyrena Forbesii*, Desh. Inv. Par. 510, pl. 37, f. 24-27. 1857.  
 Hab. France, (fossil.)  
 —*C. fuscata*, Cantor. Proc. Zool. x. 124. 1852. Is *Corbicula fluminalis*, Adams.
38. *C. gracilis*, Prime.  
*Cyrena fluminea*, Mousson. Moll. Java, 87, pl. xv. f. 3. 1849.  
*Corbicula Moussonii*, Desh. Litt. Adams, Rec. Gen. 2, 447. 1853.  
 Hab. Java.  
 —*C. grandis*, Desh. Proc. Zool. xxii. 344. 1854, is *Corbicula Woodiana*, Adams.
39. *C. Gravesii*, Desh.  
*Cyrena Gravesii*, Desh. Coq. Foss. Par. 2, 810. 1824.

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- C. Gravii*, Desh. Loc. sup. cit. 1, 120, pl. 19, f. 3-4. 1824.  
*Cyclas Gravesii*, d'Orb. Prod. 2, 323. 1850.  
 Hab. France, (fossil.)  
 —*C. hammalis*, Ferussac. Mag. Zool. v. 59-60. 1835.  
*Cyclas hammalis*, Fer. Rafin. Bory St. Vt. Ann. Gen. Sci. Phy. v. 319.  
 1820. (Not described.)
40. *C. inæquilateralis*, Prime. In litt. 1860.  
 Hab. Africa.
41. *C. incrassata*, Desh. Proc. Zool. xxii. 342, 1854.  
 Hab. ?
42. *C. Largillierii*, Adams. Rec. Gen. 2, 447. 1858.  
*Cyrena Largillierii*. Phil. Zeit. Malac. 163. 1844. Abb. 2, 75, pl. 1,  
 f. 1. 1846.  
 Hab. China.
43. *C. limosa*, Adams. Rec. Gen. 2, 447. 1858.  
*Tellina limosa*, Maton. Trans. Linn. Soc. London x. 325, pl. 24, f. 8-10.  
 1809.  
*Cyrena limosa*, Gray. Ann. Ph. n. ser. ix. 137. 1825.  
 Hab. South America.
44. *C. Malacensis*, Desh. Proc. Zool. xxii. 343. 1854.  
 Hab. Malacca.
45. *C. Manillensis*, Prime.  
*Cyrena Manillensis*. Phil. Zeit. Malac. 163. 1844.  
*C. fluviatilis*. Phil. (non *Venus fluminea*, Chemn.) Phil. Abb. 2, 77,  
 pl. 1, f. 5. 1846.  
 Hab. Manilla.
46. *C. maxima*, Prime. Proc. Zool. xxviii. 1860.  
 Hab. ?
47. *C. media*, Prime.  
*Cyrena media*, Fitton. Ann. Ph. and n. ser. vii. 376. 1824.  
*Cyclas media*, Sowb. M. Conch. vi. 51, pl. 527, f. 2. 1829.  
 Hab. Engl. (fossil.)
48. *C. minor*, Prime. In litt. 1860.  
 Hab. ?
49. *C. mixta*, Desh.  
*Cyrena mixta*, Desh. Inv. Par. 1058.  
 Hab. France, (fossil.)  
 —*C. Moussonii*, Desh. Adams, Rec Gen. 2, 447. 1858. Is *Corbicula*  
*gracilis*, Prime.
50. *C. Nepeansis*, Prime.  
*Cyclas Nepeansis*, Less. Voy. Coq. ii, 428, pl. xiii. f. 14. 1820.  
 Hab. N. South Wales.
51. *C. nitens*, Adams. Rec. Gen. 2, 447. 1858.  
*Cyrena nitens*. Phil. Zeit. Malac. 163. 1844. Abb. 2, 76, pl. 1, f. 4,  
 1846.  
 Hab. China.
52. *C. notata*, Prime. In litt. 1860.  
 Hab. Phillipines.
53. *C. obovata*, Prime.  
*Cyclas obovata*, Sowb. Min. Conch. 2, 140, pl. 162, f. 4-6. 1818.  
*Cyrena obovata*, Desh. Encycl. Méth. 2, 52. 1830.  
 Hab. Engl. (fossil.)
- 1860.]

54. *C. obscura*, Desh. Proc. Zool. xxii. 342. 1854.  
Hab?
55. *C. obsoleta*, Desh. Proc. Zool. xxii. 345. 1854.  
Hab. Uruguay.
56. *C. occidentis*, Bens. Adams, Rec. Gen. 2, 447. 1858.  
Hab. India.
57. *C. orbicularis*, Prime.  
*Cyrena orbicularis*, Desh. Mellev. Mem. Terr. Tert. Par. 35, pl. 2, f. 3, 4. 1843.  
*Cyclas suborbicularis*, d'Orb. Prod. 2, 304. 1850.  
*Cyrena suborbicularis*, Desh. Inv. Par. 497. pl. 38, f. 11, 12. 1857.  
Hab. France, (fossil.)
58. *C. orientalis*, Adams. Rec. Gen. 2, 447. 1858.  
*Cyrena orientalis*, Lam. Lam. v. 552. 1818. Delessert, pl. vii. f. 8. 1841.  
Hab. Asia.
59. *C. ovalina*, Desh. Proc. Zool. xxii. 343. 1854.  
Hab. Port. Essington, Australia.
60. *C. ovalis*, Prime. Proc. Zool. xxviii. 1860.  
Hab?
61. *C. Panormitana*, Adams. Rec. Gen. 2, 447. 1858.  
*Cyrena Panormitana*, Bivon.  
Hab. Europe, (fossil.)
62. *C. Paranacensis*, Adams. Rec. Gen. 2, 448. 1858.  
*Cyrena Paranacensis*, d'Orb. Guer. Mag. v. 44. 1835.  
*Cyclas Paranacensis*, d'Orb. Voy. Amer. 567, pl. 83, f. 23-25. 1846.  
Hab. S. America.
63. *C. parva*, Prime.  
*Cyrena ovalina*, Desh. Inv. Par. 505, pl. 36, f. 16-18. 1857.  
Hab. France, (fossil.)
64. *C. parvula*, Prime. In litt. 1860.  
Hab. India.
65. *C. pisum*, Desh.  
*Cyrena pisum*, Desh. Coq. Foss. Par. 1, 117, pl. 19, f. 10-13. 1824.  
*Cyclas pisum*, d'Orb. (non Math.) Prod. 2, 322. 1850.  
Hab. France, (fossil.)
66. *C. prolongata*, Prime. In litt. 1860.  
Hab. E. Australia.
67. *C. pulchella*, Adams. Rec. Gen. 2, 448. 1858.  
*Cyrena pulchella*, Mouss. Moll. Java, 88, pl. 15, f. 4. 1849.  
Hab. Java.
68. *C. pullata*, Adams. Rec. Gen. 2, 448. 1858.  
*Cyrena pullata*, Phil. Phil. Abb. 3, 110. 1849.  
Hab. Sumatra.
69. *C. pusilla*, Adams. Rec. Gen. 2, 448. 1858.  
*Cyrena pusilla*, Parr. Phil. Abb. 3, 78, pl. 1, f. 7. 1846.  
Hab. River Nile.
70. *C. radiata*, Adams. Rec. Gen. 2, 447. 1858.  
*Cyrena radiata*, Parr. Phil. Abb. 2, 78, pl. 1, f. 8. 1846.  
Hab. River Nile.

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71. *C. recurvata*, Eydoux. Adams, Rec. Gen. 2, 448. 1858.  
Hab. ?
72. *C. regularis*, Pr. MSS. 1859. Collect. Cuming.  
Hab. Deacan River, Australia.
73. *C. rhomboidea*, Pr. MSS. 1859. Collect. Auctoris.  
Hab. Malacca.
74. *C. rivalis*, Adams. Rec. Gen. 2, 448. 1858.  
*Cyrena rivalis*, v. d. Busch. Phil. Abb. 3, 110, pl. 3, f. 5. 1849.  
*Corbicula striatella*, Desh. Proc. Zool. xxii. 344. 1854.  
Hab. Java.
75. *C. rotunda*, Prime. Proc. Ac. N. S. Phil. 1860.  
Hab. Surinam.
76. *C. Rouyana*, Prime.  
*Cyclas Rouyana*, d'Orb. Prod. 2, 381. 1850.  
*Cyrena Rouyana*, Bgt. Sph. p. 51. 1854.  
Hab. France, (fossil.)
77. *C. semistriata*, Desh.  
*Venulites subaratus*, Schloth. Petr. 200. 1820.  
*Cyrena semistriata*, Desh. Encycl. 2, 52. 1830.  
*C. trigona*, Desh. } Goldf. Petr. Germ. 2. 1834-40.  
*C. cuneiformis*, Fer. }  
*C. subovata*, Bronn. Leth. Geog. 2, 958, pl. 38, f. 2. 1835-8.  
*Cyclas semistriata*, d'Orb. Prod. 3, 19. 1852.  
*Cyrena convexa*, Heb. et Renev. Foss. Num. Sup. 59. 1854.  
Hab. Europe, (fossil.)
78. *C. semisulcata*, Desh. Proc. Zool. xxii. 343. 1854.  
Hab. Victoria River, Australia.  
—*C. similis*, Adams. Rec. Gen. 2, 448. 1858, is *Corbicula Woodiana*, Adams.
79. *C. solidula*, Prime. In litt. 1860.  
Hab. ?
80. *C. squalida*; Desh. Proc. Zool. xxii. 342. 1854.  
Hab. ?  
—*C. striatella*, Desh. Proc. Zool. xxii. 344. 1854. Is *Corbicula rivalis*, Adams.
81. *C. subradiata*, Prime.  
*Cyrena subradiata*, Kurr.  
Hab. India.
82. *C. sulcatina*, Desh. Proc. Zool. xxii. 348. 1854.  
Hab. ?
83. *C. tellinella*, Prime.  
*Cyrena tellinella*, Ferussac. Hist. Moll. f. 1.  
*Cyclas tellinella*, d'Orb. Prod. 2, 304. 1850.  
Hab. Europe, (fossil.)
84. *C. tellinoidea*, Prime.  
*Cyrena tellinoidea*, Bouillet. Cat. Foss. 156. 1836.  
Hab. France, (fossil.)
85. *C. tenuistriata*, Prime. Proc. Zool. xxviii. 1860.  
Hab. ?
86. *C. triangula*, Prime.  
*Cyrena trigona*, Desh. Coq. Foss. Par. 1, 118, pl. 19, f. 16, 17. 1824.  
1860.]

- Cyclas trigona*, d'Orb. Prod. 2, 304. 1850.  
Hab. France, (fossil.)
87. *C. triangularis*, Desh. Proc. Zool. xxii. 345. 1854.  
Hab. ?
88. *C. trigona*, Desh. Proc. Zool. xxii. 344. 1854.  
Hab. Pondicherry, India.
89. *C. trigonella*, Prime.  
*Cyrena trigonella*, Lam. Lam. v. 552. 1818.  
Hab. East Indies.
90. *C. truncata*, Prime.  
*Cyrena truncata*, Lam. Lam. v. 553. 1818.  
Hab. N. America, (fossil.)
91. *C. tumida*, Desh. Proc. Zool. xxii. 343. 1854.  
Hab. Borneo.
92. *C. Vapincana*, Prime.  
*Cyclas Vapincana*, d'Orb. Prod 2, 381. 1850.  
*Cyrena Vapincana*, Bgt. Sph. fr. 51. 1854.  
Hab. France, (fossil.)
93. *C. variegata*, Adams. Rec. Gen. 2, 448. 1858.  
*Cyrena variegata*, d'Orb. Guer. Mag. v. 44. 1835.  
*Cyclas variegata*, d'Orb. Voy. Amer. 567, pl. 82, f. 14-16. 1846.  
*Cyclas limosa*, d'Orb. Loc. sup. cit. pl. 82, f. 14-16. 1846.  
Hab. S. America.
94. *C. veneriformis*, Desh.  
*Cyrena veneriformis*, Desh. Inv. Par. 499, pl. 38, f. 1, 2. 1857.  
Hab. France, (fossil.)
95. *C. ventricosa*, Prime. In litt. 1860.  
Hab. Mazatlan.
96. *C. violacea*, Prime. In litt. 1860.  
Hab. ?
97. *C. Woodiana*, Adams. Rec. Gen. 2, 448. 1858.  
*Cyrena Woodiana*, Lea. Trans. Amer. Phil. Soc. v. 110, pl. 18, f. 55. 1832.  
*Cyrena similis*, Gray. Grif. Cuv. pl. 20, f. 2. 1834.  
*Corbicula grandis*, Desh. Proc. Zool. xxii. 344. 1854.  
*Corbicula similis*, Adams. Rec. Gen. 2, 448. 1858.  
Hab. China.
- CYRENA, Lamarek.
1. *C. abbreviata*, Desh. Invt. Par. 491, pl. 38, f. 13, 14. 1857.  
Hab. France, (fossil.)  
—*C. acutangularis*, Desh. Loc. sub. cit. 517, pl. 38, f. 17, 18. 1857.  
Is *Corbicula acutangularis*, Desh.
2. *C. æqualis*, Glf. Petr. germ. 2, 224, pl. 146, f. 5, 1834—40.  
Hab. Germany, (fossil.)
3. *C. æquilatera*, Desh. Proc. Zool. xxii. 20. 1854.  
Hab. Guiana.
4. *C. affinis*, Desh. Loc. sub. cit. xxii. 16. 1854.  
Hab. Australia.  
—*C. Africana*, Kr. Moll. S. Afr. 8, pl. 1, f. 9. 1848. Is *Corbicula Africana*, Adams.

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- C. Alpina*, Bgt. Sph. fr. 49. 1854. Is *Corbicula Alpina*, Prime.
- C. agrensis*, Kurr. In litt. Is *Corbicula agrensis*, Prime.
- 5. *C. alta*, Dkr. Wäld. 153. 1854.  
Hab. Germany, (fossil.)  
—*C. altilis*, Gld. Bost. Il. vi. 400, pl. xvi. f. 5. 1852. Is *Cyrena Mexicana*, Sowb.
- 6. *C. ambigua*, Br. Geol. Il. x. 275. 1854.  
Hab. Germany, (fossil.)  
—*C. amygdalina*, Desh. Inv. Par. 500, pl. 37, f. 22, 23. 1857. Is *Corbicula amygdalina*, Desh.
- 7. *C. Anglica*, Prime.  
*Cyrena obtusa*, Forbes, (preoc.) Rec. Sci. 2, pl. 3, f. 4.  
Hab. England, (fossil.)
- 8. *C. angulata*, Römer. Oolitt. i. 117, pl. 9, f. 12. 1835.  
Hab. Germany, (fossil.)  
—*C. angulata*, Desh. Proc. Zool. xxii. 22. 1854. Is *Cyrena tumida*, Prime.  
—*C. angusta*, Desh. Inv. Par. 508, pl. 37, f. 9–12. 1857. Is *Corbicula angusta*, Desh.
- 9. *C. angustidens*, Desh. Mellev. Terr. Tert. Par. 35, pl. 2, f. 1, 2. 1843.  
*Cyclas angustidens*, d'Orb. Prod. 2, 304. 1850.  
Hab. France, (fossil.)
- 10. *C. anomala*, Desh. Proc. Zool. xxii. 21. 1854.  
*Cyrena Peruviana*, Desh. In litt.  
Hab. Peru.  
—*C. antiqua*, Fer. Moll. Terr. Fluv. f. 5. Is *Corbicula antiqua*, Prime.
- 11. *C. apicina*, Dkr. Wäld. 149. 1834.  
Hab. Germany, (fossil.)
- 12. *C. arata*, Forbes. Geol. Il. vii. pl. 5, f. 6. 1851.  
Hab. England, (fossil.)
- 13. *C. arctata*, Desh. Proc. Zool. xxii. 20. 1854.  
Hab. Maracaibo.
- 14. *C. arenaria*, Forbes. Rec. Sci.  
Hab. England, (fossil.)  
—*C. Arnoudii*, Pot. & Mich. Gal. Moll. 2, 192, pl. 61, f. 15, 16. 1838–'44. Is *Corbicula Arnoudii*, Prime.  
—*C. arveniensis*, Desh. Trait. Conch. 2, 698. 1843–'50. Is *Corbicula Arveniensis*, Desh.
- 15. *C. astarte*, Dkr. Wäld. 153. 1831.  
Hab. Germany, (fossil.)  
—*C. Australis*, Desh. Encycl. 2, 50. 1830. Is *Corbicula Australis*, Desh.
- 16. *C. Bengalensis*, Lam. Lam. v. 554. 1818.  
*Venus Bengalensis*, Lister, pl. 345, f. 182.  
*Cyclas Bengalensis*, Fer.  
Hab. Asia.
- 17. *C. Boliviana*, Phil. Zeit. Malac. 70. 1851.  
Hab. Bolivia.  
—*C. Bouilleti*, Desh. Trait. Conch. 2, 698. 1843–50. Is *Corbicula Bouilleti*, Desh.  
—*C. breviscula*, Desh. Inv. Par. 503, pl. 36, f. 9–11. 1857. Is *Corbicula breviscula*, Desh.

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18. *C. Bronnii*, Dkr. Wäld. 160. 1834.  
Hab. Germany, (fossil.)  
—*C. Britannica*, Desh. Inv. Par. 501. 1857. Is *Corbicula Britannica*, Desh.
19. *C. brunea*, Pr. Proc. Zool. xxviii. 1860.  
Hab. ?
20. *C. Buschii*, Phil. Abb. 3, 78, pl. 2, f. 2. 1849.  
Hab. ?
21. *C. Caledonica*, Gas. Il. Conch. vi. 277. 1857.  
Hab. N. Caledonia.
22. *C. Californiensis*, Prime.  
*Cyrena subquadrata*, Desh. (preoc.) Proc. Zool. xxii. 21, 1854.  
Hab. California.
23. *C. cardioides*, Desh. Inv. Par. 498, pl. 36, f. 1-3. 1857.  
Hab. France, (fossil.)
24. *C. Caroliniensis*, Lam. Lam. v. 1818.  
*Cyclas Caroliniensis*, Bosc. Fer. Cat. Méth. 84. 1807.  
*C. Caroliniana*, Bosc. 3, 37, pl. xviii. f. 4.  
Hab. N. America.
25. *C. caudata*, Roemer. Oolit. 1, 117, pl. 8, f. 13. 1835.  
*Cyrena excavata*, Roemer. Loc. sub. cit. 1, 117, pl. 9, f. 6. 1835.  
Hab. Germany, (fossil.)  
—*C. Charpentierianus*, Bgt. (err.) Il. Conch. iv. 173. 1853. Is *Ancylus Charpentierianus*, Bgt.
26. *C. Charpentieri*, Desh. P. & M. Gal. Moll. 2, 191, pl. 61, f. 18, 19. 1838-44.  
Hab. Europe, (fossil.)  
—*C. Childrenæ*, Gray. Ann. Phy. n. ser. ix. 137. 1825. Is *Batissa Childrenæ*, Gray.
27. *C. compressa*, Desh. Lam. (ed. Desh.) vi. 279. 1835.  
*Cyrena depressa*, Desh. (non Lam.) Dict. class. h. n. v. 290. 1824.  
*Cyclas subdepressa*, d'Orb. Prod. 2, 381. 1850.  
Hab. France, (fossil.)
28. *C. compta*, Desh. Proc. Zool. xxii. 18. 1854.  
Hab. ?  
—*C. compta*, Desh. Inv. Par. 491, pl. 35, f. 1-3, pl. 36, f. 19, 20. 1857. Is *Cyrena Gallicana*, Prime.
29. *C. conjuncta*, Desh. Proc. Zool. xxii. 15. 1854.  
Hab. ?  
—*C. consobrina*, Cail. Voy. Mer. iv. 263, t. 2, pl. 61, f. 10, 11. 1826.  
Is *Corbicula cor*, Adams.  
—*C. convexa*, H. & Renev. Foss. num. sup. 59. 1854. Is *Corbicula semistriata*, Desh.  
—*C. cor*, Lam. Lam. v. 552. 1818. Is *Corbicula cor*, Adams.
30. *C. corbiculæformis*, Prime. Ac. N. S. Phil. Proc. 1860.  
Hab. Malabar.
31. *C. cordata*, Morris. Geol. Il. x. 158, pl. 2, f. 8, 9. 1854.  
Hab. England, (fossil.)
32. *C. cordiformis*, Desh. Dict. class. h. n. 290. 1824.  
Hab. France, (fossil.)  
—*C. cordiformis*, Recluz, (preoc.) Il. Conch. 251, pl. 7, f. 9. 1853.  
Is *Cyrena Recluzii*, Prime.

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- C. crassa*, Desh. Coq. foss. Par. i. 119, pl. 18, f. 14, 15. 1824. Is *Corbicula crassa*, Desh.
- C. crassula*, Mouss. Malak. Blät. 57. 1855. Is *Corbicula crassula*, Prime.
- 33. *C. Credueri*, Dkr. Weald. 152. 1846.  
Hab. Germany, (fossil.)
- 34. *C. crenulata*, Desh. Inv. Par. 518, pl. 34, f. 10-12. 1857.  
Hab. France, (fossil.)
- 35. *C. Cubensis*, Prime.  
*Cyclas maritima*, d'Orb. D'Orb. Cuba 2, 280, pl. xxi. f. 47-50. 1853.  
Hab. Cuba.
- 36. *C. Cumingii*, Desh. Proc. Zool. xxii. 22. 1854.  
Hab. Central America.  
—*C. cuneata*, Jonas. Zeit. Malak. 186. 1844. Is *Corbicula cuneata*, Adams.  
*C. cuneiformis*, Fer. Moll. terr. fluv. Is *Corbicula cuneiformis*, Prime.
- 37. *C. Cunninghamii*, Forbes. Geol. II. vii. 112, pl. v. f. 9. 1851.  
Hab. England, (fossil.)  
—*C. cycladiformis*, Desh. Coq. foss. Par. 1, 121, pl. 19, f. 7-9. 1824.  
Is *Corbicula cycladiformis*, Desh.  
—*C. cyclostoma*, Bgt. (err.) II. Conch. iv. 193. 1853. Is *Ancylus cyclostoma*, Bgt.  
—*C. Cyprinoides*, Gray. Ann. Phy. n. ser. ix. 136. 1825. Is *Velovita Cyprinoides*, Gray.
- 38. *C. Cyprinoides*, Quoy. Voy. Astrol. 3, 513, pl. 82, f. 1-3. 1834.  
Hab. N. Guinea.  
—*C. debilis*, Gld. Bost. Proc. 3, 293. 1850. Is *Corbicula debilis*, Prime.
- 39. *C. decipiens*, Desh. Proc. Zool. xxii. 17. 1854.  
Hab. ?
- 40. *C. densata*, Conrad. Ac. N. S. Phil. Proc. i. 324. 1845.  
*Cyclas densata*, d'Orb. Prod. 3, 109. 1852.  
Hab. North America, (fossil.)  
—*C. deperdita*, Desh. Coq. foss. Par. 1, 118, pl. 19, f. 14, 15. 1824.  
Is *Corbicula deperdita*, Desh.  
—*C. deperdita*, Morris. Cat. Brit. foss. 86. 1843. Is *Corbicula Britannica*, Desh.  
—*C. depressa*, Lam. Lam. v. 553. 1818. Encycl. pl. 302, f. 3. Is *Asartarte borealis*, Gray.  
—*C. depressa*, Desh. Dict. class. h. n. v. 290. 1824. Is *Cyrena compressa*, Desh.  
—*C. Deshayesii*, Hebert. Bull. Soc. Géol. Fr. 2d ser. v. 401, f. a'. b'. 1848. Is *Corbicula Deshayesii*, Prime.  
—*C. Deshayesianus*, Bgt. (err.) II. Conch. iv. 183. 1853. Is *Ancylus Deshayesianus*, Bgt.
- 41. *C. difficilis*, Desh. Inv. basin. Par. 513, pl. 37, f. 3-5. 1857.  
Hab. France, (fossil.)
- 42. *C. dispar*, Koch & Dkr. Oolit. 60, pl. vii. f. 6, a. b. 1837.  
Hab. Germany, (fossil.)
- 43. *C. distincta*, Desh. Inv. Par. 492, pl. 35, f. 7-9. 1857.  
Hab. France, (fossil.)

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44. *C. divaricata*, Desh. Proc. Zool. xxii. 17, 1854.  
 Hab. N. Guinea.  
 —*C. douacialis*, Desh. Dict. class. h. n. v. 290. 1824. Is *Corbicula cuneiformis*, Prime.  
 —*C. douaciformis*, Anton. Verz. 1839. Is *Corbicula cuneiformis*, Prime.
45. *C. douacina*, Dkr. Wäld. 162. 1854.  
 Hab. Germany, (fossil.)
46. *C. dorsata*, Dkr. Wäld. 155. 1834.  
 Hab. Germany, (fossil.)
- 46a *C. Dulchurchiensis*?  
 Hab. England, (fossil.)
47. *C. Dumasii*, de Serres. Bull. Sci. 328. 1827.  
 Hab. France, (fossil.)
48. *C. Dutemplicii*, Desh. Inv. Par. 493, pl. 34, f. 43, 44. 1857.  
 Hab. France, (fossil.)
49. *C. dura*, Desh. Proc. Zool. xxii. 20. 1854.  
 Hab. ?
50. *C. elegans*, Dkr. Wäld. 166. 1834.  
 Hab. Germany, (fossil.)
51. *C. elliptica*, Dkr. Wäld. 148. 1834.  
 Hab. Germany, (fossil.)  
 —*C. elongata*, Rœm. Oolit. i. 117, t. ix. f. 11. 1826. Is *Cyrena Mantelli*, Dkr.
52. *C. elongata*, Dkr. Weald. 155. 1846.  
*Cyclas elongata*, Sowb. Trans. Geol. Soc. 2d ser. iv. 346, pl. 21, f. 9. 1836.  
 Hab. Europe, (fossil.)
53. *C. erebea*, Pr.  
*Mactra erebea*, Brongt. Mem. Vicent. 81, pl. v. f. 8. 1823.  
*Cyclas erebea*, d'Orb. Prod. 2, 323. 1850.  
 Hab. Europe, (fossil.)
54. *C. Essingtonensis*, Desh. Proc. Zool. xxii. 19.  
 Hab. Port Essington.  
 —*C. Euphratica*, Bronn. Syst. Urwelt. pl. 4, f. 10. Is *Corbicula fluminalis*, Adams.  
 —*C. excavata*, Rœm. i. 117, pl. ix. f. 6. 1835. Is *Cyrena caudata*, Rœmer.
55. *C. eximia*, Dkr. Zeit. Malak. 51. 1852. Pf. Nov. Conch. 8 livr. 88. pl. xxiv. 1857.  
*Cyrena impressa*, Desh. Proc. Zool. xxii. 18. 1854.  
*Batissa impressa*, Adams. Rec. gen. 2, 448. 1858.  
 Hab. Java.
56. *C. expansa*, Mouss. Moll. Java, 89, pl. 14. 1849.  
 Hab. Java.
57. *C. fabacea*, Rœm. Oolit. 2, 40, pl. 19, f. 16.  
 Hab. Germany, (fossil.)
58. *C. fabulina*, Desh. Inv. Par. 506, pl. 37, f. 13-15. 1857.  
 Hab. France, (fossil.)
59. *C. fallax*, Desh. Proc. Zool. xxii. 15. 1854.  
 Hab. Australia.

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60. *C. C. fasciata*, Rœm. Oolit. 1, 116, pl. ix. f. 10. 1835.  
*Cyclas fasciata*, Gldf. Petr. Germ. 2, 232, pl. 147, f. 10. 1834-40.  
 Hab. Germany, (fossil.)
61. *C. Faujigasii*, Desh. Encycl. 2, 51. 1830.  
*Venus de mayeuce*, Faujas. Ann. Mus. 8, 379, pl. 58, f. 9, 10. 1806.  
*Cyrena lævigata*, Gldf. Petr. Germ. 2, 224, pl. 149, f. 1. 1834-40.  
*Cyrena polita*, Gldf. Loc. sub. cit. 2, 224, pl. 149, f. 2. 1834-40.  
*Cyclas Faujasii*, d'Orb. Prod. 3, 109. 1852.  
 Hab. Europe, (fossil.)  
 —*C. Ferrussaci*, Math. Math. Cat. Méth. 149, pl. xiv. f. 14, 15. 1852.  
 Is *Corbicula Ferrussaci*, Prime.
62. *C. flava*, Prime. Proc. Zool. xxviii. 1860.  
 Hab. ?
63. *C. Floridana*, Conrad. Ac. N. S. Phil. Proc. 3, 23, pl. i. f. 1. 1846.  
 Hab. Florida.  
 —*C. fluminalis*, Bgt. Cat. Sauley 79. 1853. Is *Corbicula fluminalis*, Adams.  
 —*C. fluminea*, Lam. Lam. v. 553. 1818. Is *Corbicula fluminea*, Adams.  
 —*C. fluviatilis*, Phil. Abb. 3, 77, pl. i. f. 5. 1846. Is *Corbicula Manillensis*, Prime.
64. *C. Fontainei*, Phil. Zeit. Malak. 8, 70. 1851.  
*Cyclas Fontainei*, d'Orb. Voy. Amer. 569, pl. 83, f. 14, 15. 1844.  
 Hab. S. America.  
 —*C. Forbesii*, Desh. Inv. Par. 510, pl. 37, f. 24-27. 1857. Is *Corbicula Forbesii*, Deshayes.
65. *C. fortis*, Prime. Proc. Zool. xxviii. 1860.  
 Hab. Equador.
66. *C. fossulata*, Cornuel. Mem. Soc. Geol. Fr. iv. 286, pl. 15, f. 1, a-d, 1840.  
*Cyclas fossulata*, d'Orb. Prod. 2, 60. 1850.  
 Hab. France, (fossil.)
67. *C. fragilis*, Desh. Proc. Zool. xxviii. 1860.  
 Hab. ?  
 —*C. fuscata*, Lam. Lam. v. 552. 1818. Is *Corbicula fluminalis*, Adams.
68. *C. Galathea*, Rhdt. Morch's Kierulf 32, pl. 2. 1850.  
*Cyrena Zeylanica* var. *major*, Mous. Java 89, pl. 13. 1849.  
 Hab. Nicobar Islands.
69. *C. Gallicana*, Pr.  
*Cyrena compta*, Desh. (preoc.) Invt. Par. 491, pl. 35, f. 1-3, pl. 36, f. 19, 20. 1857.  
 Hab. France, (fossil.)  
 —*C. Gaudichaudi*, Val. (err.) Mag. Zool. pl. 119, f. 2. 1838. Is *Velo-rita Cyprinoides*, Gray.  
 —*C. Gauritziana*, Kr. In litt. 1848. Is *Corbicula Africana*, Adams.
70. *C. Gemmellari*, Phil. Sicil. 1, 39, pl. iv. f. 3. 1836.  
 Hab. Europe, (fossil.)
71. *C. Geslini*, Desh. Encycl. 2, 52. 1830.  
*Cyclas Geslini*, d'Orb. Prod. 3, 109. 1852.  
 Hab. Europe, (fossil.)
72. *C. gibbosa*, DuKr. Wäld. 157. 1834.  
 Hab. Germany, (fossil.)
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73. *C. globosa*, Math. Cat. Méth. 148, pl. xiv. f. 12, 13. 1842.  
*Cyclas globosa*, d'Orb. Prod. 3, 19. 1852.  
 Hab. France, (fossil.)  
 —*C. globulus*, Jonas. MSS. Is *Corbicula cuneata*, Adams.  
 —*C. Gravesii*, Desh. Coq. foss. Par. 2, 810. 1824. Is *Corbicula Gravesii*, Desh.  
 —*C. Gravi*, Desh. Coq. foss. Par. 1, 120, pl. 19, f. 3, 4. Is *Corbicula Gravesii*, Desh.
74. *C. Hebertii*, Desh. Invt. Par. 516, pl. 36, f. 4-6. 1857.  
 Hab. France, (fossil.)
75. *C. heterodonta*, Desh. Invt. Par. 518, pl. 34, f. 13-15. 1857.  
 Hab. France, (fossil.)
76. *C. Heysii*, Dkr. Wäld. 147. 1834.  
 Hab. Germany, (fossil.)  
 —*C. impressa*, Desh. Proc. Zool. xxii. 18. 1854. Is *Cyrena excinia*, Dkr.
77. *C. incerta*, Desh. Proc. Zool. xxii. 19. 1854.  
 Hab. ?
- 77a. *C. incompta*, Desh. Invt. Par. 1857.  
 Hab. France, (fossil.)
78. *C. inflata*, Phil. Zeit. Malak. 71. 1851.  
 Hab. S. America.  
 —*C. inflata*, Desh. (preoc.) Proc. Zool. xxii. 23. 1854. Is *Cyrena Panamaensis*, Pr.
79. *C. inquinata*, Desh. Proc. Zool. xxii. 15. 1854.  
 Hab. China.
80. *C. insignis*, Desh. Proc. Zool. xxii. 20. 1854.  
 Hab. California.
81. *C. intermedia*, Desh. Mellev. Terr. Tert. Par. 35, pl. 2, f. 5, 6. 1843.  
*Cyclas intermedia*, d'Orb. Prod. 2, 304. 1850.  
 Hab. France, (fossil.)  
 —*C. intermedia*, Meek & Hayden. Ac. N. S. Phil. Proc. 8, 116. 1856.  
 Is *Cyrena Nebrascensis*, M. & H.
82. *C. isocardia*, Dkr. Wäld. 151. 1854.  
 Hab. Germany, (fossil.)
83. *C. isocardioides*, Desh. Proc. Zool. xxii. 22. 1854.  
 Hab. S. America.
84. *C. Jamesonii*, Forbes. Geol. II. vii. 111, pl. v. f. 7, 8. 1851.  
 Hab. England, (fossil.)  
 —*C. Jayensis*, Lea. Trans. Amer. Phil. Soc. v. 108, pl. 17, f. 52. 1832.  
 Is *Batissa Jayensis*, Adams.
85. *C. Jukesii*, Desh. Proc. Zool. xxii. 19. 1854.  
 Hab. Australia.  
 —*C. Keraudrenii*, Lesson. Voy. Coq. 2, 429, pl. xi. f. 3. 1829. Is *Batissa Keraudrenii*.
86. *C. Kochii*, Dkr. Wäld. 159. 1834.  
 Hab. Germany, (fossil.)  
 —*C. lævigata*, Gldf. Petr. Germ. 2, 224, pl. 149, f. 1, a, b. 1834-40. Is *Cyrena Fajassii*, Desh.
87. *C. lævis*, Pr.  
 Hab. Borneo.

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88. *C. Lamberti*, Desh. Invt. Par. 495, pl. 38, f. 9, 10. 1857.  
 Hab. France, (fossil.)  
 —*C. Largillierti*, Phil. Zeit. Malak. 163. 1844. Is *Corbicula Largillierti*, Pr.
89. *C. lato-ovata*, Roemer. Oolit. i. 116, pl. 9, f. 4. 1835.  
*Venulites similimus*, Schl. Petr. 200. 1820.  
*Venulites douacialis*, Schl.. In Collect.  
 Hab. Germany, (fossil.)
90. *C. lauta*, Desh. Proc. Zool. xxii. 15, 1854.  
 Hab. ?
91. *C. lentiformis*, Roemer. Oolit. 2, 41, pl. 19, f. 9.  
 Hab. Germany, (fossil.)  
 —*C. limosa*, Gray. Ann. Phy. n. ser. ix. 137. 1835. Is *Corbicula limosa*, Pr.
92. *C. lunulata*, Desh. Invt. Par. 495, pl. 34, f. 16-19. 1857.  
 Hab. France, (fossil.)
93. *C. MacCullochii*, Forbes. Geol. II. vii. 112, pl. v. f. 10, a, b. 1851.  
 Hab. England, (fossil.)
94. *C. mactræformis*, Pr.  
*Cyrena mactroides*, Desh. (preoc.) Proc. Zool. xxii. 17. 1854.  
 Hab. ?
95. *C. mactroides*, Roemer. Oolit. i. 116, pl. ix. f. 2. 1835.  
 Hab. Germany, (fossil.)  
 —*C. mactroides*, Desh. Proc. Zool. xxii. 17. 1854. Is *Cyrena mactræformis*, Pr.
96. *C. major*, Morris. Cat. Brit. Foss. 200. 1854  
*Cyclas major*, Sowb. Trans. Geol. 2d ser. iv. 176, 346, pl. xxi. f. 13. 1836.  
 Hab. England, (fossil.)
97. *C. majuscula*, Roemer. Oolit. i. 117, pl. ix. f. 1-3. 1835.  
*Cyclas majuscula*, Glf. Petr. Germ. 2, 232, pl. 147, f. 6, a-c. 1834-40.  
 Hab. Europe, (fossil.)  
 —*C. Manillensis*, Phil. Zeit. Malak. 163. 1844. Is *Corbicula Manillensis*, Pr.
98. *C. Mantelli*, Dkr. Weald, 42, pl. 13, f. 2. 1846.  
*Cyrena elongata*, Roemer. Oolit. i. 117, pl. ix. f. 11. 1835.  
*Cyclas angulata*, Sowb. Trans. Geol. 2d ser. iv. 176, 346, pl. xxi. f. 12. 1836.  
*Cyclas carinata*, Glf. Petr. Germ. 2, 232, pl. 147, f. 9, a-c. 1834-'40.  
*Cyrena angulata*, Morris. Brit. Foss. 199. 1854.  
 Hab. Europe, (fossil.)
99. *C. maritima*, C. B. Adams. Ann. N. Y. Lyc. v. 499. 1852.  
 Hab. Panama.  
 —*C. media*, Fitton. Ann. Phy. n. ser. viii. 376. 1824. Is *Corbicula media*, Pr.
100. *C. membranacea*, Fitton. Ann. Phy. n. ser. 8, 176. 1824.  
*Cyclas membranacea*, Sowb. Min. Conch. vi. 52, pl. 527, f. 3. 1829.  
*Cyrena membranacea*, Sowb. Morris. Brit. Foss. 200. 1854.  
 Hab. England, (fossil.)
101. *C. Menkeii*, Dkr. D. et M. Paleont. 1, 40, pl. vi. f. 23-25. 1846.  
*Venus Menkeii*, Dkr. In litt.  
 Hab. Germany, (fossil.)

02. *C. Mexicana*, Sowb. Zool. II. (Sowb. et Brod.) 364. 1829.  
*Cyrena altilis*, Gld. Bost. II. vi. 400, pl. xvi. f. 5. 1852.  
 Hab. N. America.
103. *C. minuta*, Desh. Invt. Par. 507, pl. 35, f. 10-12. 1857.  
 Hab. France, (fossil.)  
 —*C. mixta*, Desh. Invt. Par. 1857. Is *Corbicula mixta*, Desh.  
 —*C. Moquinianus*, Bgt. (err.) II. Conch. iv. 1853. Is *Ancylus Moquinianus*, Bgt.
104. *C. Moreauensis*, Meek & Hayden. Ac. N. S. Phil. Proc. viii. 115. 1856.  
 Hab. N. America, (fossil.)
105. *C. multidentata*, Auton. Conch. 13. 1839.  
 Hab. Europe, (fossil.)  
 —*C. Murchisonii*, Dkr. Weald. 30, pl. x. f. 2-5. 1846. Is *Cyrena rotunda*, Dkr.
106. *C. Nebrascensis*, M. & H.  
*Cyrena intermedia*, Meek & Hayden, (preoc.) Ac. N. S. Phil. Proc. viii. 116. 1856.  
 Hab. N. America, (fossil.)  
 —*C. nitens*, Phil. Zeit. Malak. 163. 1844. Is *Corbicula nitens*, Adams.
107. *C. nitida*, Desh. Proc. Zool. xxii. 23. 1854.  
 Hab. ?
108. *C. nitidula*, Desh. Proc. Zool. xxii. 23. 1854.  
 Hab. ?
109. *C. nobilis*, Desh. Invt. Par. 490, pl. 36, f. 14, 15. 1857.  
 Hab. France, (fossil.)
110. *C. notabilis*, Desh. Proc. Zool. xxii. 21. 1854.  
 Hab. Peru.
111. *C. nuculaeformis*, Rømer. Oolit. 1, 118, pl. ix. f. 13. 1835.  
 Hab. Germany, (fossil.)  
 —*C. obesa*, Hinds. Ann. Mag. n. h. n. ser. x. 81. 1842. Is *Batissa obesa*, Adams.
112. *C. obliqua*, Desh. Dict. Class. h. n. v. 290. 1824.  
 Hab. France, (fossil.)
113. *C. oblonga*, Quoy. Voy. Astrol. 3, 517, pl. 82, f. 6-8. 1834.  
 Hab. Vanikoro.  
 —*C. obovata*, Desh. Encycl. 2, 52. 1830. Is *Corbicula obovata*, Desh.
114. *C. obscura*, Pr. Proc. Zool. xxviii. 1860.  
 Hab. S. America.
115. *C. obtusa*, Rømer. Oolit. 1, 115, pl. ix. f. 76. 1835.  
 Hab. Germany, (fossil.)  
 —*C. obtusa*, Forbes. Rec. Scie. 2, pl. 3, f. 4. Is *Cyrena Anglicana*, Pr.
116. *C. occidentalis*, Meek & Hayden. Ac. N. S. Phil. Proc. viii. 118. 1856.  
 Hab. N. America, (fossil.)
117. *C. olivacea*, Carp. In litt.  
 Hab. N. America.

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118. *C. orbicularis*, Roemer. Oolit. 1, 115, pl. ix. f. 8. 1835.  
*Cyclas orbicularis*, Gff. Petr. Germ. 2, 231, pl. 147. f. 5. 1834-40.  
 Hab. Germany, (fossil.)  
 —*C. orbicularis*, Desh. Mellev. Terr. Tert. 35, pl. 2, f. 3, 4. 1843.  
     is *Corbicula orbicularis*, Prime.  
 —*C. orientalis*, Lam. Lam. v. 552. 1818. Is *Corbicula orientalis*, Adams.  
 —*C. ovalina*, Desh. Invt. Par. 505. pl. 36, f. 16-18. 1867. Is *Corbicula parva*, Prime.
119. *C. ovalis*, Dkr. Wäld. 158. 1834.  
 Hab. Germany, (fossil.)
120. *C. oviformis*, Desh. Proc. Zool. xxii. 16. 1854.  
 Hab. Philippines.
121. *C. pallida*, Desh. Proc. Zool. xxii. 17. 1854.  
 Hab. ?
122. *C. Panamensis*, Pr.  
*Cyrena inflata*, Desh. (preoc.) Proc. Zool. xxii. 23. 1854.  
 Hab. Panama.  
 —*C. Panormitana*, Bivon. Is *Corbicula Panormitana*, Adams.
123. *C. Papua*, Lesson. Mag. Zool. pl. xi. 1832.  
 Hab. Waigou.  
 —*C. Paranacensis*, d'Orb. Mag. Zool. 44. 1835. Is *Corbicula Paranacensis*, Adams.
124. *C. parva*, Morris. Brit. Foss. 200. 1854.  
*Cyclas parva*, Sowb. Geol. Trans. 2d ser. iv. 345, pl. 21, f. 7. 1836.  
 Hab. England, (fossil.)
125. *C. Panormitana*, Roemer. Oolit. 1, 115, pl. ix. f. 9. 1835.  
 Hab. Germany, (fossil.)
126. *C. parvula*, Desh. Invt. Par. 509, pl. 37, f. 6-8. 1857.  
 Hab. France, (fossil.)  
 —*C. Peruviana*, Desh. Is *Cyrena anomala*, Desh.  
 —*C. Petitianus*, Bgt. Il. Conch. iv. 1853. Is *Ancylus Petitianus*, Bgt.
127. *C. Philippinarum*, Hanley. Proc. Zool. xii. 159. 1844. Wood's Suppl. Cat. pl. xiv. f. 60.  
 Hab. Philippines.  
 —*C. pisum*, Desh. Coq. Foss. Par. 1, 117, pl. 19, f. 10-13. 1824. Is *Corbicula pisum*, Desh.
128. *C. placens*, Hanley. Proc. Zool. xii. 160. 1844. Wood's Suppl. Cat. pl. xiv. f. 52.  
 Hab. N. America.
129. *C. placida*, Desh. Proc. Zool. xxii. 19. 1854.  
 Hab. ?
130. *C. planulata*, Desh. Invt. Par. 501, pl. 35, f. 16-18. 1857.  
 Hab. France, (fossil.)  
 —*C. polita*, Gff. Petr. Germ. 2, 224, pl. 149, f. 2. 1834-40. Is *Cyrena Faujasii*, Desh.
131. *C. ponderosa*, Pr. Ac. N. S. Phil. Proc. 1860.  
 Hab. Philippines.
132. *C. prona*, Dkr. Wäld. 166. 1834.  
 Hab. Germany, (fossil.)
- 1860.]

133. *C. Proserpina*, Pr.  
*Venus Proserpina*, Brongt. Mem. Vicent. 81, pl. v. f. 7. 1823.  
*Cyclas Proserpina*, d'Orb. Prod. 2, 323. 1850.  
 Hab. Europe, (fossil.)
134. *C. psmacola*, Desh. Invt. Par. 505, pl. 35, f. 4-6. 1857.  
 Hab. France, (fossil.)  
 —*C. pulchella*, Mous. Moll. Java, 88, pl. xv. f. 4. 1849. Is *Corbicula pulchella*, Adams.
135. *C. pulchra*, Morris. Brit. Foss. 86. 1843.  
*Cyclas pulcher*, Sowb. Min. Conch. vi. 51, pl. 527. f. 1. 1829.  
 Hab. England, (fossil.)  
 —*C. pulchra*, Wright. Ann. n. h. Is *Cyrena Wrightii*, Forbes.  
 —*C. pullata*, Phil. Abb. 2, 110. 1849. Is *Corbicula pullata*, Adams.  
 —*C. purpurea*, Lea. Amer. Il. xlii. 106, pl. 1, f. 1. 1842. Is *Venus gemma*, Totten.  
 —*C. pusilla*, Parr. Phil. Abb. 2, 78, pl. 1. f. 7. 1846. Is *Corbicula pusilla*, Adams.
136. *C. radiata*, Hanley. Proc. Zool. xii. 159. 1844.  
*Cyrena solida*, Phil. Abb. 5, 78, pl. 1, f. 9. 1846.  
 Hab. Central America.  
 —*C. radiata*, Parr. Phil. Abb. 2, 78, pl. 1, f. 8. 1846. Is *Corbicula radiata*, Adams.  
 —*C. Raymondi*, Bgt. (err.) Il. Conch. iv. 1853. Is *Ancylus Raymondi*, Bgt.
137. *C. Recluzi*, Prime.  
*Cyrena cordiformis*, Recluz. Il. Conch. iv. 251, pl. vii. f. 9. 1853.  
 Hab. ?  
 —*C. recurvata*, Val. Mag. Zool. pl. 117, f. 2. 1838. Is *Velorita Cyprinoides*, Gray.
138. *C. regulata*, Gassies. Il. Conch. vii. 372. 1858.  
 Hab. N. California.
139. *C. Rigaultii*, Desh. Invt. Par. 494, pl. 36, f. 12, 13. 1857.  
 Hab. France, (fossil.)  
 —*C. rivalis*, v. d. Busch. Phil. Abb. 3, 110, pl. 3, f. 5. 1849. Is *Corbicula rivalis*, Adams.
140. *C. roborata*, Desh. Invt. Par. 499, pl. 38, f. 15, 16. 1857.  
 Hab. France, (fossil.)  
 —*C. Roemerii*, Dkr. Wäld. 41. 1834. Is *Cyrena trigona*, Roemer.
141. *C. rotunda*, Dkr. Wäld. 145. 1834.  
*Cyrena Murchisoni*, Dkr. Weald. 30, pl. x. f. 25. 1846.  
 Hab. Germany, (fossil.)  
 —*C. rotundata*, Lea. Trans. Amer. Phil. Soc. v. pl. 17, f. 51, 107. 1832. Is *Batissa rotundata*, Adams.  
 —*C. Rouyana*, Bgt. Sph. Fr. 51. 1854. Is *Corbicula Rouyana*, Prime.
142. *C. Saincenyensis*, Desh. Invt. Par. 496. pl. 38, f. 7, 8. 1857.  
 Hab. France, (fossil.)
143. *C. salmacida*, Morelet. Test. Cub. pt. 2d, 26. 1851.  
 Hab. Central America.  
 —*C. semistriata*, Desh. Encycl. 2, 52. 1830. Is *Corbicula semistriata*, Desh.  
 —*C. similis*, Gray. Griff. Cuv. pl. 20, f. 2. 1834. Is *Corbicula Woodiana*, Adams.

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144. *C. similis*, Desh. Proc. Zool. xxii. 16. 1854.  
Hab. Manilla.
145. *C. singularis*, Desh. Invt. Par. 508, pl. 35, f. 13—15. 1857.  
Hab. France, (fossil.)
146. *C. sinuosa*, Desh. Proc. Zool. xxii. 18. 1854.  
*Cyrena Zeilanica*, Mouss. Java, 89, pl. xii. 1849.  
Hab. Java.
147. *C. Sirena*, Pr.  
*Mastra Sirena*, Brongt. Mem. Vicent. 81, pl. v. f. 10. 1823.  
*Cyrena Brongniartii*, Bast. Mem. S. N. Par. 2, 84. 1825.  
*C. Sowerbyi*, Bast. Loc. sub. cit. 2, 84, pl. vi. f. 6. 1825.  
*Cyclas Sirena*, d'Orb. Prod. 2, 320. 1850.  
*C. Brongniartii*, d'Orb. Loc. sub. cit. 3, 109. 1852.  
Hab. France, (fossil.)  
—*C. spissa*, Desh. Coq. Foss. Par. 1, p. 9, pl. 18, f. 14, 15. 1824. Is *Corbicula crassa*, Desh.
148. *C. solida*, Dkr. Wäld. 145. 1834.  
Hab. Germany, (fossil.)  
—*C. solida*, Phil. Abb. 2, 78, pl. 1, f. 9. 1846. Is *Cyrena radiata* Hanley.
149. *C. sordida*, Hanley. Proc. Zool. xii. 1844. Wood's Suppl. pl. xiv. f. 51.  
Hab. N. America.
150. *C. striata*, Galleoti. Index Paleont. 1, 391. 1848—9.  
Hab. Europe, (fossil.)
151. *C. striatula*, Munster. Glf. Petr. Germ. 2, 225, pl. 149, f. 3. 1834—40.  
Hab. Germany, (fossil.)
152. *C. subangulata*, Les. Grat. Moll. Fr. 52. 1855.  
Hab. France, (fossil.)  
—*C. subarata*, Br. Leth. Geog. 2, 958, pl. 38, f. 2. 1835—8. Is *Corbicula semistriata*, Desh.
153. *C. subcordata*, Dkr. Wäld. 154. 1834.  
Hab. Germany, (fossil.)
154. *C. sublævis*, Roemer. Oolit. 1, 116, pl. xi. f. 5. 1835.  
*Cyclas sublævis*, Glf. Petr. 2, 232, pl. 147, f. 7. 1834—40.  
Hab. Germany, (fossil.)
155. *C. sublobata*, Desh. Proc. Zool. xxii. 18. 1854.  
Hab. ?
156. *C. suborbicularis*, v. d. Busch. Phil. Abb. 3, 77, pl. 2, f. 1. 1849.  
Hab. Manilla.  
—*C. suborbicularis*, Desh. Invt. Par. 497, pl. 38, f. 11, 12. 1857.  
Is *Corbicula orbicularis*, Pr.
157. *C. subquadrata*, Morris. Brit. Foss. 200. 1854.  
*Cyclas subquadrata*, Sowb. Geol. Trans. 2d ser. iv. 177, 345, pl. xxi. f. 8. 1836.  
Hab. England, (fossil.)  
—*C. subquadrata*, Desh. Proc. Zool. xxii. 21. 1854. Is *Cyrena Californiensis*, Pr.  
—*C. subradiata*, Kurr. Is *Corbicula subradiata*, Pr.
158. *C. sulcata*, Hoenighaus. Irb. 456. 1850.  
Hab. Europe, (fossil.)
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159. *C. Sumatraensis*, Sowb. Gen. of Shells, 1. Phil. Abb. 3, 109, pl. 3, f. 4. 1849.  
 Hab. Sumatra.  
 —*C. tellinella*, Fer. Hist. Moll. f. 1. Is *Corbicula tellinella*, Pr.  
 —*C. tellinoidea*, Bouillet. Cat. Cuv. 156. 1836. Is *Corbicula tellinoidea*, Pr.
160. *C. tellinoides*, DeFr. Cuv. Foss. 2, 263. 1821—3.  
 Hab. Europe, (fossil.)  
 —*C. tenebrosa*, Hinds. Ann. n. h. n. ser. x. 21. 1842. Is *Batissa tenebrosa*, Adams.
161. *C. tenuis*, Dkr. Wäld. 158. 1834.  
 Hab. Germany, (fossil.)
162. *C. tetragona*, Desh. Invt. Par. 502, pl. 34, f. 20—22. 1857.  
 Hab. France, (fossil.)
163. *C. transversa*, Forbes. Rec. Scie. 2, pl. 3, f. 6.  
 Hab. England, (fossil.)
164. *C. triangulara*, v. d. Busch. Phil. Abb. 3, 78, pl. 2, f. 3. 1849.  
*Cyrena triangularis*, Metcalf. Proc. Zool. 19, 74. 1851.  
 Hab. Borneo.  
 —*C. triangularis*, Metcalf. Proc. Zool. xix. 74. 1851. Is *Cyrena triangulara*, v. d. Busch.  
 —*C. trigona*, Desh. Coq. Foss. Par. 1, 118, pl. 19, f. 16, 17. 1824. Is *Corbicula triangulara*, Pr.
165. *C. trigona*, Roemer. Oolit. 1, 116, pl. ix, f. 7. 1835.  
*Cyclas trigona*, Glf. Petr. 2, 233, pl. 147, f. 11. 1836—40.  
*Cyrena Roemeri*, Dkr. Wäld. 41. 1834.  
 Hab. Germany, (fossil.)  
 —*C. trigonella*, Lam. Lam. v. 552. 1818. Is *Corbicula trigonella*, Pr.  
 —*C. trigonula*, Wood. Ann. Mag. n. h. vii. 275, f. 45. 1841. Is *Corbicula Duchastelli*, Syst.  
 —*C. truncata*, Lam. Lam. v. 553. 1818. Is *Corbicula truncata*, Pr.
166. *C. tumida*, Pr.  
*Cyrena angulata*, Desh. Proc. Zool. xxii. 22. 1854.  
 Hab. ?
167. *C. turgida*, Lea. Amer. Phil. Soc. v. 109, pl. 18, f. 53. 1832.  
 Hab. ?
168. *C. umbonata*, Auton. Conch. 13. 1839.  
 Hab. Europe, (fossil.)
169. *C. unionides*, Dkr. Wäld. 150. 1834.  
 Hab. Germany, (fossil.)
170. *C. uniformis*, Desh. Invt. Par. 503, pl. 38, f. 5, 6. 1857.  
 Hab. France, (fossil.)
171. *C. Vanikorensis*, Quoy. Voy. Astrol. 3, 515, pl. 82, f. 4, 5. 1834.  
 Hab. Vanikoro.  
 —*C. Vapincana*, Bgt. Sph. Fr. 51. 1854. Is *Corbicula Vapincana*, Prime.  
 —*C. variegata*, d'Orb. Mag. Zool. 44. 1835. Is *Corbicula variegata*, Adams.  
 —*C. veneriformis*, Desh. Invt. Par. 499, pl. 38, f. 1, 1. 1857. Is *Corbicula veneriformis*, Desh.

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172. *C. ventricosa*, Desh. Proc. Zool. xxii. 16. 1854.  
Hab. Philippines.
173. *C. venulina*, Dkr. Wäld. 155. 1834.  
Hab. Germany, (fossil.)  
—*C. violacea*, Lam. Lam. v. 553. 1818. Is *Batissa violacea*, Adams.  
—*C. Woodiana*, Lea. Trans. Amer. Phil. Soc. v. 110, pl. 18, f. 55. 1832. Is *Corbicula Woodiana*, Adams.
174. *C. Wrightii*, Forbes. Rec. Sci. 2, pl. iv. f. 4.  
*Cyrena pulchra*, Wright. Ann. n. h.  
Hab. England, (fossil.)
175. *C. Zeylanica*, Lam. Lam. v. 1818. Delessert, pl. vii. 1841.  
*Venus Ceylonica*, Chemn. vi. 333, pl. 32, f. 336. 1769.  
*V. coaxans*, Gml. 3278, f. 336. 1788.  
*Cyclas Zeylanica*, Lam. Ann. Mus. vii. 420. 1806.  
Hab. Ceylon.
176. *C. Zimmermannii*, Dkr. Wäld. 151. 1834.  
Hab. Germany, (fossil.)

## SPHÆRIUM, Scopoli.

1. *Sph. acuminatum*, Pr. Ads. rec. gen. ii. 450. 1858.  
*Cycl. acuminata*, Pr. Bost. Proc. iv. 155. 1851. Loc. sup. cit. iv. 283. 1852. Jay, Cat. iv. ed. 466. 1852. Bgt. Amen. 1, p. 7. 1853.  
*Cycl. albulata*, Pr. Bost. Proc. iv. 155. 1851. Jay, Cat. iv. ed. 466. 1852. Bgt. Amen. 1, p. 7. 1853.  
*Cycl. inornata*, Pr. Bost. Proc. iv. 159. 1851. Loc. sup. cit. iv. 284. 1852. Bgt. Amen. 1, p. 8. 1853.  
*Cycl. simplex*, Pr. Bost. Proc. iv. 159. 1851. Loc. sup. cit. iv. 284. 1852.  
*Sph. albulum*, Pr. Ads. rec. gen. ii. 450. 1858.  
*Sph. inornatum*, Pr. Loc. sup. cit. ii. 450. 1858.  
*Sph. simplex*, Pr. Loc. sup. cit. ii. 450. 1858.  
Hab. N. Amer.  
—*Cycl. acuta*, Pf. Moll. Germ. 230. 1821. Is *Pisid. Henslowianum*, Jen.  
—*Cycl. (Physemoda) æqualis*, Rafin. Bory St. Vt. An. gen. sci. phy. v. 319. 1820. Is *Pisid. Virginicum*, Bgt.  
—*Cycl. æquata*, Sheph. Mss. 1840. Is *Sph. rivicola*, Lam.  
—*Cycl. alata*, Leach. Moll. Gt. Brit. 291. 1852. Is *Sph. corneum*, Scop.  
—*Sph. albulum*, Pr. Ads. rec. gen. ii. 450. 1858. Is *Sph. acuminatum*, Pr.  
—*Cycl. alpina*, d'Orb. Prod. 2, 381. 1850. Is *Cyrena alpina*, Bgt.  
—*Cycl. atilis*, Anth. C. B. Adams, Cat. 29. 1847. Is *Pisid. compressum*, Pr.
2. *Sph. altum*, Dumt. & Mort.  
*Cyclas alta*, D. & M. Moll. Sav. 1852.  
Hab. Italy, (fossil.)  
—*Cycl. anmica*, Turt. Conch. 250, pl. 2, f. 15. 1822. Is *Pisidium anmicum*, Jen.  
—*Cycl. angulata*, Sowb. Geol. Trans. 2d ser. iv. 176, 346, pl. xxi. f. 12. 1836. Is *Cyrena Mantelli*, Dkr.  
—*Cycl. angustidens*, d'Orb. Prod. 2, 304. 1850. Is *Cyrena angustidens*, Desh.  
—*Cycl. antiqua*, d'Orb. Prod. 2, 304. 1850. Is *Cyrena antiqua*, Fer.  
—*Cycl. appendiculata*, Turt. Man. 15, pl. 1, f. 6. 1831. Is *Pisidium Henslowianum*, Jen.

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3. Sph. *Aquæ Sextiæ*, Sowb. Bgt. Sph. 45. 1854.  
*Cycl. aquæ-Sextiæ*, Sowb. Edin. New Phil. II. vii, 296. 1829.  
*Cycl. Gargasensis*, Math. Cat. Méth. 147, pl. xiv. f. 6. 1842.  
 Hab. France, (fossil.)  
 —*Cycl. Aquensis*, Math. Cat. Méth. 148, pl. xiv. f. 8-9. 1842. Is Sph. *gibbosum*, Sowb.
4. Sph. *argentinum*, d'Orb. Ads. rec. gen. ii. 450. 1858.  
*Cycl. argentina*, d'Orb. Mag. Zool. 1835. d'Orb. Voy. Amer. 568, pl. 83, f. 5, 7. 1844.  
 Hab. S. Amer.
5. Sph. *aureum*, Pr. Ads. rec. gen. ii. 450. 1858.  
*Cycl. aurea*, Pr. Bost. Proc. iv. 159, 1851. Loc. sup. cit. iv. 288. 1852. Jay. Cat. iv. ed. 465. 1852. Bgt. Amen. 1, p. 7. 1853.  
 Hab. N. Amer.  
*Cycl. Australis*, Lam. Lam. v. 560. 1818. Is *Corbicula Australis*, Desh.
6. Sph. *Bahiense*, Spix.  
*Cycl. Bahiensis*, Spix. Test. Braz. 32, pl. xxv. f. 5, 6. 1827. Moricand mem. coq. terr. fluv. Br. 31, Bgt. Amen. 1, p. 7, 53. 1853.  
*C. maculata*, Anton. Wieg. Archiv. 284. 1837. Anton. Verz. 14. 1839.  
*Musculium Bahiense*, Spix. Ads. rec. gen. ii. 451. 1858.  
*M. maculatum*, Anton. Loc. sup. cit. ii. 451. 1858.  
*Pisum Bahiense*, Spix. Loc. sup. cit. ii. 560. 1858.  
*P. maculatum*, Anton. Loc. sup. cit. ii. 560. 1858.  
 Hab. S. Amer.
7. Sph. *Boissyii*, Desh. Inv. Paris, 521, pl. 34, f. 37, 39. 1857.  
 Hab. France, (fossil.)  
 —*Cycl. borealis*, Lam. Ann. Mus. vii. 421. 1806. Is a *Venus*.
8. Sph. *Bristovi*, Forbes.  
*Cycl. Bristovi*, Forbes, Rec. Scie. 2, pl. 2, f. 3. Morris, Cat. Brit. Fos. 198. 1854.  
 Hab. England, (fossil.)
9. Sph. *Brochonianum*, Bgt. Sph. 20, pl. 3, f. 1, 5. 1854.  
*Cycl. Corsa*, Charp. Mss.  
 Hab. France.
10. Sph. *Brongniarti*, Koch et Dkr.  
*Cycl. Brongniarti*, K. et D. Oolit. 59, pl. vii. f. 4, a, b. 1837.  
 Hab. Europe, (fossil.)  
 —*Cycl. Brongniarti*, d'Orb. Prod. 3, 109. 1852. Is *Cyrena Sirena*, Pr.  
 —*Cycl. Brongniartina*, Math. Cat. Méth. 145, pl. xiv. f. 2. 1842. Is *Pisid. cuneatum*, Petit.
11. Sph. *Buchi*, Dkr.  
*Cycl. Buchi*, Dkr. Wäld. 167. 1834.  
 Hab. Germ. (fossil.)
12. Sph. *bulbosum*, Anth. Ads. rec. gen. ii. 450. 1858.  
*Cycl. bulbosa*, Anth. Pr. Bost. Proc. iv. 283. 1852.  
 Hab. N. Amer.  
 —*Sph. cœruleum*, Pr. Ads. rec. gen. ii., 450. 1858. Is *Sph. partumeium*, Say.  
 —*Cycl. calyculata*, Drap. Hist. Moll. 130, pl. x. f. 13, 14. 1805. Is *Sph. lacustre*, Fer.

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13. *Sph. capense*, Krauss. Ads. rec. gen. ii. 450. 1858.  
*Cycl. capensis*, Kr. Moll. S. Afr. 7, pl. 1, f. 6. 1848.  
 Hab. Africa.
14. *Sph. cardissum*, Pr. Ads. rec. gen. ii. 450. 1858.  
*Cycl. cardissa*, Pr. Bost. Proc. iv. 160. 1851. Loc. sup. cit. iv. 277.  
 1852. Bgt. Amen. 1, p. 7. 1853. Lewis, Bost. Proc. v. 122. 1855.  
 Hab. N. Amer.  
 —*Cycl. carinata*, Goldf. Petr. Germ. 2, 232, pl. 147, f. 9, a, c. 1834–40. Is *Cyrena Mantelli*, Dkr.  
 —*Cycl. Caroliniana*, Bosc. Hist. Coq. 3, 37, pl. 18, f. 4. 1802. Is *Cyrena Caroliniensis*, Lam.  
 —*Cycl. Caroliniensis*, Bosc. Fer. Cat. Méth. 84. 1807. Is *Cyrena Caroliniensis*, Lam.  
 —*Sph. castaneum*, Pr. Ads. rec. gen. ii. 450. 1858. Is *Sph. fabalis*, Pr.
15. *Sph. castrense*, Noulet. Coq. fos. etc., 16. 1857.  
 Hab. France, (fossil.)  
 —*Cycl. Chilensis*, d'Orb. Voy. Amer. Sept. 568, pl. 83, f. 11, 13. 1844. Is *Corbicula Chilensis*, Pr.  
 —*Cycl. Chinensis*, Lam. Amer. Mus. vii. 421. 1806. Is *Corbicula fluminea*, Adams.  
 —*Cycl. cinerea*, Hanl. Rec. spec. 1, 91. 1843. Is *Pisid. casertanum*, Bgt.  
 —*Cycl. citrina*, Brown. Conch. Gt. Brit. 132, pl. 39, f. 37. 1849. Is *Sph. corneum*, Scop.  
 —*Sph. citrinum*, Normd. Cycl. Dépt. Nord. 1. 1854. Is *Sph. Scaldianum*, Norm.
16. *Sph. clandestinum*, da Costa?  
*Cycl. clandestina*, da Costa. Jay, Cat. iv. ed. 32. 1850. (Undescribed.)  
 Hab. S. Amer.
17. *Sph. concentricum*, Bronn.  
*Cycl. concentrica*, Br. Ital. tert. gebild. 96. 1831.  
 Hab. Italy, (fossil.)
18. *Sph. concinnum*, Sowb. Bgt. Sph. 43. 1854.  
*Cycl. concinna*, Sowb. Edin. N. Phil. II. vii. 297. 1829.  
*C. Galloprovincialis*, Math. Cat. Méth. 146, pl. xiv. f. 34. 1842.  
 Hab. France, (fossil.)  
 —*Sph. consobrinum*, Fer. Ads. Rec. Gen. ii. 450. 1858. Is *Sph. ovale*, Fer.  
 —*Cycl. consobrina*, Cail. Reeve, Conch. Nomencl. 29, 1845. Is *Corbicula orientalis*, Adams.  
 —*Sph. constrictum*, Anth. Ads. Rec. Gen. ii. 450. 1858. Is *Sph. transversum*, Say.
19. *Sph. Coquandianum*, Math. Bgt. Sph. 46. 1854.  
*Cycl. Coquandiana*, Math. Cat. Méth. 147, pl. xiv. f. 7. 1842.  
 Hab. France, (fossil.)
20. *Sph. corneum*, Scop. Intr. ad Hist. Nat. 397. 1777.  
*Clama cinerea*, d'Arg. Conch. 2d pt. 368, 374, pl. 31. 1742.  
*Tellina cornea*, Linn. Syst. Nat. (10th ed.) 1, 678. 1758.  
*T. rivalis*, Müll. Hist. Verm. 2, 202. 1774.  
*Cycl. cornea*, (pars.) Drap. tabl. Moll. 105, No. 1, var. b. 1801.  
*Cardium corneum*, Mont. Test. Brit. 86. 1803.  
*C. amicum*, Pult. Cat. 31. 1803.  
*Cycl. vivalis*, Drap. Hist. Moll. 129, pl. x. f. 45. 1805.

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- Tellina communis*, Megerle. Berl. Mag. 1811.  
*Cycl. nucleus*, Stud. Mem. Soc. Helv. Sci. Nat. 1, p. 25, pl. 2, f. 23. 1837.  
*C. lutea*, Ziegler. Anton. Verg. 14. 1839.  
*C. stagnicola*, Leach. Mss. Brit. Mus. 1840.  
*C. Leachii*, Ziegler. Villa. Cat. 44. 1841.  
*C. tumida*, Ziegler. Loc. Sup. Cit. 44. 1841.  
*C. globosa*, Megerle. Loc. Sup. Cit. 44. 1841.  
*C. plumbeus*, ? Loc. Sup. Cit. 44. 1841.  
*C. flavescens*, McGillvi. Moll. Scot. 208, 246. 1844.  
*Pisidium cornea*, Verany. Cat. Jur. 13. 1846.  
*Cycladites corneus*, Krüg. Urwelt. 2, 469. Bronn. Paleont. 1, 372. 1846.  
*Cycl. citrina*, Brown. Conch. Grt. Brit. 132. pl. 39, f. 37. 1849.  
*C. isocardoides*, Norm. Dup. Moll. 668. 1852.  
*C. alata*, Leach. Moll. Gt. Brit. 291. 1852.  
*C. fossarum*, Kryn. Bgt. Amen. 1, p. 8. 1853.

Hab. Europe.

- Cycl. Corsa*, Charp. Mss. Is Sph. *Brochonianum*, Bgt.  
 —*Cycl. crassa*, d'Orb. Prod. 2, 422. 1850. Is *Cyrena crassa* Desh.

21. Sph. *Creplini*, Dukr. Norm. Cycl. 3. 1854.

- Cycl. Creplini*, Dukr. Zeit. Malak. 20. 1845. *Muscul*, (do.) Dkr. Ads. Rec. Gen. ii. 451. 1858. *Pisum*, (do.) Dkr. Loc. Sup. Cit. ii. 560. 1858.

Hab. Europe.

- Cycl. crocea*, Lewis, Bost. Proc. v. 25. 1854. Is Sph. *securis*, Pr.  
 —*Cycl. cuneata*, Sowb. Edin. n. Phil. II. vii. 297. 1829. Is *Pisid. cuneatum*, Petit.  
 —*Cycl. cuneiformis*, Sowb. Min. Conch. 2, 140, pl. 162, f. 2, 3. 1818. Is *Cyrena cuneiformis*, Fér.  
 —*Cycl. cycladiformis*, d'Orb. Prod. 2, 381. 1850. Is *Cyrena cycladiformis*, Desh.  
 —*Cycl. cyraenopsis*, Val. Encycl. pl. 301, f. 3. Is ?

22. Sph. *Ddingoli*, Bivona. Ann. N. Y. Lyc. vii. 97. 1859.

- Cycl. Ddingoli*, Bivon. Coq. Palerm. 3. 1839.  
*Pisid. Ddingoli*, Bivon. Villa. Cat. 44. 1841.

Hab. Sicily.

- Cycl. Denainvilliersi*, Boissy. Bull. Soc. Geol. Fr. 2d ser. iv. 178. 1846. Is *Pisid. Denainvilliersi*, Desh.  
 —*Cycl. densata*, d'Orb. Prod. 3, 109. 1852. Is *Cyrena densata*, Conrad.

23. Sph. *dentatum*, Hald. Ads. Rec. Gen. ii. 450. 1858.

- Cycl. dentata*, Hald. Ac. N. S. Phil. Proc. 1, 100. 1841. Pr. Bost. Proc. iv. 250. 1852.

Hab. N. Amer.

- Cycl. deperdita*, Lam. An. Mus. vii. 421. 1806. Is *Corbicula deperdita*, Desh.  
 —*Cycl. depressa*, Nyst. Coq. fos. Anv. 36, pl. v. f. 5, 6. Is *Erycina depressa*, Nyst.  
 —Sph. *Deshayesianum*, Bgt. Amen. i. p. 6. 1853. Is Sph. *ovale*, Fér.  
 —Sph. *detruncatum*, Pr. Ads. rec. gen. ii. 450. 1858. Is Sph. *transversum*, Say.  
 —*Cycl. diaphana*, Pr. Bost. II. vi. 367. 1852. Is Sph. *maculatum*, Morlt.

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- Sph. distortum*, Pr. Ads. rec. gen. ii. 450. 1858. Is *Sph. solidulum*, Pr.
- Sph. dubium*, Say. Ads. rec. gen. ii. 450. 1858. Is *Pisid. Virginicum*, Bgt.
- Cycl. dubiosa*, Say. Reeve's Conch. Nomen. 29. 1845. Is *Pisid. Virginicum*, Bgt.
- Cycl. duplicata*, Pf. Moll. Germ. 230. 1821. Is *Pisid. duplicatum*, Pf.
- Cycl. Dupontia*, Fer. Cat. 20. 1837. Is *Cyrenella Dupontia*, Joan.
- 24. *Sph. eburneum*, Anth. Ads. rec. gen. ii. 450. 1858.  
*Cycl. eburnea*, Anth. in Pr. Bost. Proc. iv. 279. 1852.  
 Hab. N. Amer.
- Cycl. edentula*, Say. New Harm. Dissem. 2, 356. 1829. Is *Sph. striatinum*, Lam.
- 25. *Sph. egregium*, Gould. (non Say.) Ads. rec. gen. ii. 450. 1858.  
*Cycl. egregia*, Gl. Bost. Proc. 3, 292. 1850.  
 Hab. Oceanica.
- Sph. elegans*, C. B., Ads. Ads. rec. gen. ii. 450. 1868. Is *Sph. rhonoboideum*, Say.
- 26. *Sph. elevatum*, Hald. Ads. rec. gen. ii. 450. 1858.  
*Cycl. elevata*, Hald. Ac. N. S. Phil. Proc. i. 53. 1841. DeKay, 224. 1842. Pr. Bost. Proc. iv. 280. 1852. Bgt. Amen. i. p. 8. 1853.  
*Cycl. pallida*, Charp. Mss. 1851.  
 Hab. N. Amer.
- Cycl. elongata*, Sowb. Gosl. trans. n. ser. iv. 345, pl. 21, f. 9. 1836. Is *Cyrena elongata*, Dkr.
- 27. *Sph. emarginatum*, Pr. Ads. rec. gen. ii. 450. 1858.  
*Cycl. emarginata*, Pr. Bost. Proc. iv. 156. 1851. loc. sup. cit. iv. 283. 1852. Jay. Cat. iv. ed. 466. 1852. Bgt. Amen. i. p. 8. 1853.  
 Hab. N. Amer.
- Cycl. erebea*, d'Orb. Prod. 2, 223. 1850. Is *Cyrena erebea*, Pr.
- Cycl. Euphratica*, Lamk. An. Mus. vii. 420. 1806. Encycl. pl. 302, f. 2, pl. 302, f. 2. Is *Corbicula fluminalis*, Adams.
- 28. *Sph. faba*, Münster.  
*Cycl. faba*, Müntst. Goldf. Petr. 2, 232, pl. 147, f. 8, a, c. 1834–40.  
 Hab. Germ. (fossil.)
- 29. *Sph. fabalis*, Pr. Ads. rec. gen. ii. 450. 1858.  
*Cycl. fabalis*, Pr. Bost. Proc. iv. 159. 1851. Jay. Cat. iv. ed. 465. 1852. Bost. Proc. iv. 273. 1852. Bgt. Amen. i. p. 8. 1853.  
*Cycl. castanea*, Pr. Bost. Proc. iv. 160. 1851. loc. sup. cit. iv. 273. 1852. Bgt. Amen. i. p. 8. 1853.  
*Cysl. salculosa*, Charp. MSS. 1851.  
*Sph. castaneum*, Pr. Ads. rec. gen. ii. 450. 1858.  
 Hab. N. Amer.
- Cycl. fasciata*, Gldf. Petr. 2, 232, pl. 147, f. 10, a, b. 1834–40. Is *Cyrena fasciata*, Römer.
- Cycl. Faujasii*, d'Orb. Prod. 3, 109. 1852. Is *Cyrena Faujasii*, Desh.
- 30. *Sph. ferrugineum*, Kr.  
*Cycl. ferruginea*, Kr. Moll. S. Afr. 7, pl. i. f. 7. 1848.  
*Pisid parasiticum*, Parr. MSS.  
*Musculium parasiticum*, Ads. rec. gen. ii. 452. 1858.  
 " *ferrugineum*, Kr. loc. sup. cit. ii. 451. 1858.  
*Pisum parasiticum*, Parr. loc. sup. cit. ii. 500. 1858.

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- Masculium ferrugineum*, Kr. loc. sup. cit. ii. 560. 1858.  
 Hab. Africa.  
 —Cycl. Ferrusaci, d'Orb. Prod. 3, 19. 1852. Is Cyrena Ferrusaci, Math.  
 —Cycl. flavescens, McGil. Moll. Scot. 208, 246. 1844. Is Sph. corneum, Scop.
31. Sph. flavum, Pr. Ads. rec. gen. ii. 450. 1858.  
*Cycl. flava*, Pr. Bost. Proc. iv. 155. 1851. Jay, Cat. iv. ed. 465. 1852. Bost. Proc. iv. 284. 1852. Bgt. Amen. i. p. 8. 1853.  
 Hab. N. Amer.  
 —Cycl. fluminea, Bosc. H. n. coq. 3, 38. 1802. Is Corbicula fluminea, Adams.  
 —Cycl. fluviatilis, Bosc. H. n. coq. 3, 38. 1802. Is Corbicula fluminialis, Adams.  
 —Cycl. Fontaineii, d'Orb. Voy. Amer. 569, pl. 83, f. 14, 15. 1844. Is Cyrena Fontaineii, Phil.  
 —Cycl. fontinalis, Drap. Hist. Moll. 130, pl. x. f. 11, 12. 1805. Is Pisid. pusillum, Jen.
32. Sph. formosum, Meek & Hayden.  
*Cycl. formosa*, M. & H. Ac. N. S. Phil. Proc. viii. 115. 1856.  
 Hab. N. Amer. (fossil.)  
 —Cycl. fossarum, Kryn. Mss. (Bgt. Sph. 25. 1854.) Is Sph. corneum, Scop.  
 —Cycl. fossulata, d'Orb. Prod. 2, 60. 1850. Is Cyrena fossulata, Cornnel.
33. Sph. fragile, Meek & Hayden.  
*Cycl. fragilis*, M. & H. Ac. N. S. Phil. Proc. viii. 115. 1856.  
 Hab. N. Amer. (fossil.)
34. Sph. fuscatum, Rafin. Ads. Rec. Gen. ii. 450. 1858.  
*Cycl. fuscata*, Rafin. Mss. Pr. Bost. Proc. iv. 281. 1852. Lewis, Bost. Proc. v. 122. 1855.  
 Hab. N. Amer.  
 —Cycl. Galloprovincialis, Math. Cat. Méth. 146, pl. xiv. f. 34. 1842. Is Sph. concinnum, Sowb.
35. Sph. Gardanense, Math. Bgt. Sph. 44. 1854.  
*Cycl. Gardanensis*, Math. Math. Cat. Méth. 145, pl. xiv. f. i. 1842.  
 Hab. France, (fossil.)  
 —Cycl. Gargasensis, Math. Cat. Méth. 147. pl. xiv. f. 6. 1842. Is Aquæ Sextiæ, Sowb.  
 —Cycl. Geslini, d'Orb. Prod. 3, 109. 1852. Is Cyrena Geslini, Desh.  
 —Cycl. gibba, Ald. Trans. Nat. Hist. Soc. Northumb. 1, pt. 1, p. 41, 1830. Is Pisid. obtusale, Pf.
36. Sph. gibbosum, Sowb. Bgt. Sph. 45. 1854.  
*Cycl. gibbosa*, Sowb. Edin. N. Phil. II. vii. 297. 1829.  
*Cycl. Aquensis*, Math. Cat. Méth. 148, pl. xiv. f. 8, 9. 1842.  
 Hab. France, (fossil.)  
 —Sph. giganteum, Pr. Ads. Rec. Gen. ii. 458. 1858. Is Sph. sulcatum, Lam.  
 —Cycl. globosa, Megerle. Ville, Cat. 44, 1841. Is Sph. corneum, Scop.  
 —Cycl. globosa, d'Orb. Prod. 3, 19, 1852. Is Cyreua globosa, Math.  
 —Cycl. globus, Dubois. Fos. Wohlh. 59, pl. vi. f. 18, 19, 1831. Is Erycina globus, d'Orb.

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37. *Sph. gracile*, Pr. Ads. Rec. Gen. ii. 450. 1858.  
*Cycl. gracilis*, Pr. Bost. Proc. iv. 156. 1851. loc. sup. cit. iv. 274. 1852.  
 Bgt. Amen. 1, p. 8. 1853.  
 Hab. N. America.  
 —*Cycl. Gravesi*, d'Orb. Prod. 2, 323. 1850. Is *Cyrena Gravesi*, Desh.  
 —*Cycl. hammalis*, Rafin. Bory. It. Vt. Amen. gen. scie. phy. v. 319.  
 1820. Is *Corbicula hammalis*, Fer.  
 —*Cycl. hermaphrodita*, Mart. Mag. Nat. Hist. 1, 402, pl. 1, f. 1, 2.  
 Is *Galathea radiata*.  
 —*Sph. Herminii*, Wäld. In Collect. Cuming. 1859. Is *Pisid. casestantum*, Bgt.
38. *Sph. inconspicuum*, Pr. Proc. Zool. xxviii. 1860.  
 Hab. Asia Minor.
39. *Sph. indicum*, Desh. Proc. Zool. xxii. 342. 1854.  
 Hab. E. Indies.  
 —*Sph. inornatum*, Pr. Ads. Rec. Gen. ii. 450. 1858. Is *Sph. acuminatum*, Pr.  
 —*Cycl. intermedia*, d'Orb. Prod. 2, 304. 1850. Is *Cyrena intermedia*, Desh.  
 —*Cycl. Islandica*, Lam. An. Mus. vii. 420. 1806. Is *Cyprina Islandica*.  
 —*Cycl. isocardioides*, Norm. Drap. Moll. Fr. 668. 1852. Is *Sph. corneum*, Scop.
40. *Sph. jayanum*, Pr. Ads. Rec. Gen. ii. 450. 1858.  
*Cycl. Jayensis*, Pr. Bost. Proc. iv. 157. 1851. Loc. sup. cit. iv. 279.  
 1852. Jay, Cat. iv. ed. 465. 1852. Bgt. Amen. 1, p. 8. 1853.  
 Hab. N. America.
41. *Sph. Jeannoti*, Norm. Cycl. 2. 1854.  
 Hab. France.
42. *Sph. Jugleri*, Dkr.  
*Cycl. Jugleri*, Dkr. Wäld. 168. 1834.  
 Hab. Germ. (fossils.)  
 —*Cycl. lacustris*, Drap. Hist. Moll. 130, pl. x. f. 6, 7. 1805. Is *Sph. ovale*, Fer.
43. *Sph. lacustre*, Fer. Bgt. Amen. 1, p. 6. 1853.  
*Tellina lacustris*, Muller. Verm. 2, 204. 1774.  
*Cardium lacustre*, Mont. Test. Brit. 89. 1803.  
*Cycl. caliculata*, Drap. Hist. Moll. 130, pl. x. f. 14, 15. 1805.  
*Musculium lacustre*, Link. Besch. Coll. Univ. Rostock, 152. 1807.  
*Cycl. lacustris*, Fer. Meth. Conch. 128. 1807.  
*Tellina tuberculata*, Alten. Syst. Abh. 4, pl. 1, f. 1. 1812.  
*T. tenera*, Schrot. An. Wett. x. 316. 1814.  
*Cycl. tuberculata*, Klees. Dissert. Tub. 45. 1818.  
*Tellina stagnicola*, Sheph. Trans. Linn. Soc. xiv. 150. 1823.  
*Cycl. Perezii*, Villa. Mss. 1858.  
 Hab. Europe.  
 —*Cycl. laevigata*, Schum. 170, pl. xii. f. 1. 1817. Is *Corbicula fluminalis*, Adams.  
 —*Cycl. laevigata*, Desh. Dict. class. Hist. Nat. v. 220. 1824. Is *Pisid. laevigatum*, Bgt.  
 —*Cycl. lasmampsis*, Rafin. Bory. St. Vt. An. gen. scie. phy. v. 319, pl. 82, f. 19, 21. 1820. Is *Sph. sulcatum*, Lam.  
 —*Cycl. Leachii*, Ziegl. Villa. Cat. 44. 1841. Is *Sph. corneum*, Scop.  
 —*Cycl. lenticularis*, Norm. Cycl. 8. 1844. Is *Pisid. casertanum*, Bgt.

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- Cycl. lenticularis*, Boissy. Bull. Soc. Geol. Fr. 2nd ser. iv. 173. 1846. Is. Sph. Verneuili, Boissy.
- Cycl. limosa*, d'Orb. Voy. Amer. (err.) pl. 82, f. 14, 16. 1844. Is *Corbicula variegata*, Adams.
- Cycl. littoralis*, Fer. Fer. in collect. Michaud. Is Sph. maculatum, Morelet.
- Cycl. lutea*, Ziegl. Anton. Verz. 14. 1839. Is Sph. corneum, Scop.
- Cycl. maculata*, Anton. Wieg. Archiv. 284. 1837. Is Sph. Bahiense, Spix.
- 44. *Sph. maculatum*, Morelet. Ads. Rec. Gen. ii. 450. 1858.  
*Cycl. maculata*, Mt. Test. nov. etc. pt. 2, 25. 1851. Bgt. Amen. 1, p. 8. 1853.  
*Cycl. striatella*, Fer. Cat. 20. 1837. Collect. Mus. Paris.  
*Cycl. littoralis*, Fer. Fer. in Collect. Michaud.—Beau. Cat. Moll. Guadeloupe, 24. 1858.  
*Pisid diaphanum*, Hald. Ac. N. S. Phil. Proc. 1, 53. 1841.  
*Cycl. diaphana*, Pr. Bost. II. vi. 267. 1852.  
*Pisid. Moquinianum*, Bgt. Amen. 1, p. 61, pl. 3, f. 13, 17. 1855.  
*Cycl. Moquiniana*, Gas. Pisid. q. 1855.  
*Cycl. Venezuelensis*, Pr. Pr. in Collect. Mus. Leiden. 1857.
- Cycl. major*, Sowb. Geol. Trans. n. ser. iv. 176, 346. pl. 21. f. 13. 1836. Is. *Cyrena major*, Morris.
- Cycl. majuscula*, Gldf. Pr. Gere. 2, 232. pl. 147, f. 6, a, c. 1834–40. Is *Cyrena majuscula*, Römer.
- 45. *Sph. Mansianum*, Noulet. Coq. fos. 16. 1857.  
Hab. France, (fossil.)
- Cycl. maritima*, d'Orb. Cuba, 2, p. 350, pl. 21, f. 47, 50. 1853. Is *Cyrena Cubensis*, Prime.
- Cycl. Matheroni*, d'Orb. Prod. 2, 304. 1850. Is *Pisid cuneatum*, Petit.
- Cycl. medius*, Sowb. Min. Conch. vi. 51, pl. 527, f. 2, 1829. Is *Cyrena media*, Fitton.
- Cycl. membranaceus*, Sowb. Min. Conch. vi. 51, pl. 527, f. 3. 1829. Is *Cyrena membranacea*, Fitton.
- Cycl. minima*, Stud. Verz. 93. 1820. Is *Pisid. obtusale*, Pf.
- Cycl. minor*, C. B. Ads. Bost. Proc. 1, 48. 1841. Is *Pisid. abditum*, Hald.
- Sph. mirabile*, Pr. Ads. Rec. Gen. ii. 450. 1858. Is *Sph. partumeium*, Say.
- Sph. modestum*, Pr. Ads. Rec. Gen. ii. 450. 1858. Is *Sph. striatinum*, Lam.
- 46. *Sph. modioliforme*, Anton.  
*Cycl. modioliformis*, Anton. Wieg. Archiv. 284. 1837. Auton. Verz. 14. 1839.  
*Musculium modioliformis*, Anton. Ads. Rec. Gen. ii. 451. 1858.  
*Pisum modioliforme*, Anton. Ads. loc. sup. cit. ii. 560. 1858.
- Hab. S. America.
- Cycl. Moquiniana*, Gas. Pisid. g. 1855. Is *Sph. maculatum*, Morelet.
- Cycl. Nepeansis*, Les. Voy. Coq. ii. 4, 28. pl. 13, f. 14, 1830. Ads. Is *Corbicula Nepeansis*, Adams.
- Sph. nitidum*, C. B. Ads. & Mighl. Ads. Rec. Gen. ii. 450. 1858. Is *Pisid. Adamsi*, Pr.
- Cycl. nitida*, Hanley. Rec. spec. etc. 1. go. pl. 14. f. 46. 1843. Is *Pisid nitidum*, Jen.

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47. *Sph. nobile*, Gld.  
*Cycl. nobilis*, Gld. Bost. Proc. v. 229. 1855.  
 Hab. Oceanica.
48. *Sph. Normandi*, Michaud.  
*Cycl. Normandi*, Mich. Coq. fos. Hauterive, 27 pl. v. f. 22, 24. 1854.  
 (extra. Bull. Linn. Soc. Lyons.)  
 Hab. France, (fossil.)
49. *Sph. Nova-Zelandiae*, Desh. Proc. Zool. 22, p. 342. 1854.  
 Hab. N. Zealand & N. Holland.  
 —*Cycl. nucleus*, Stud. Mem. Soc. Helv. Sci. Nat. 1, p. 25, pl. 2. f. 23. 1837. Is *Sph. corneum*, Scop.  
 —*Cycl. nuclea*, Boissy. Bull. Soc. Geol. Fr. 2nd ser. iv. 175, 1846. Is *Pisid. nucleum*, Bgt.
50. *Sph. numismale*, Math. Bgt. *Sph.* 46. 1854.  
*Cycl. numismalis*, Math. Cat. Méth. 146, pl. 14, f. 5. 1842.  
 Hab. France, (fossil.)  
 —*Cycl. obliqua*, Lam. Lam. v. 559. 1818. Is *Pisid. amnicum*, Jen.  
 —*Cycl. obovata*, Sowb. Min. Conch. 2, 140, pl. 165, f. 4, 6. 1818.  
 Is *Cyrena obovata*, Desh.  
 —*Cycl. obtusalis*, Lam. Lam. v. 559. 1818. Is *Pisid. obtusale*, Pf.
51. *Sph. occidentale*, Pr.  
*Cycl. ovalis*, Pr. (non Fer.) Bost. Proc. iv. 276. 1852.  
*Cycl. occidentalis*, Pr. Lewis, in loc. sup. cit. v. 122. 1855. Lewis, loc. sup. cit. vi. 2. 1856.  
*Sph. ovale*, Stimps. Ads. Rec. Gen. ii. 450. 1858.  
 Hab. N. America.
52. *Sph. oepfingense*, Kl.  
*Cycl. oepfingensis*, Kl. Würt. Jhrb. 2, p. 95, pl. 2, f. 19. 1846.  
 Hab. Germany, (fossil.)  
 —*Sph. orbicularium*, Barrat. Ads. Rec. Gen. ii. 450. 1858. Is *Sph. partumeium*, Say.  
 —*Cycl. orbicularis*, Gldf. Petr. Germr. 5, 231, pl. 147, f. 5, a. b. 1834-40. Is *Cyrena orbicularis*, Römer.
53. *Sph. ovale*, Fer. Bgt. *Sph.* 31, pl. iv. f. 10. 1854.  
*Cycl. lacustris*,\* Dep. Hist. Moll. 130. pl. x. p. 6, 7. 1805.  
*Cycl. ovalis*, Fer. Méth. Conch. 2d ed. 128, 136. 1807.  
*Cycl. consobrina*, Fer. Dict. Scie. Nat. xii. 279. 1818.  
*Sph. Deshayesianum*, Bgt. Amen. 1, p. 6. 1853.  
*Sph. consobrinum*, Fer. Ads. Rec. Gen. ii. 450. 1858.  
 Hab. Europe.  
 —*Cycl. ovalis*, Nels. Il. Conch. 2, p. 408. 1851. Is *Pisid. obtusale*, Pf.  
*Sph. ovale*, Pr. (non Stimps.) Ads. Rec. Gen. ii. 450, 1858. Is *Sph. occidentale*, Pr.
54. *Sph. ovatum*, Lewis.  
*Cycl. ovata*, Lewis. Bost. Proc. vi. 2. 1856.  
 Hab. N. America.  
 —*Cycl. pallida*, Charp. Mss. 1851. Is *Sph. elevatum*, Hald.  
 —*Sph. pallidum*, Gray. Ads. Rec. Gen. ii. 450. 1858. Is *Sph. corneum*, Scop.  
 —*Cycl. palustris*, Drap. Tabl. Moll. 106. 1801. Is *Pisid. amnicum*, Jen.

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\*Non *Tellina lacustris*, Muller, which is *Sph. lacustre*.

—Cycl. *Paranensis*, d'Orb. Voy. Amer. Sept. 567. pl. 83. f. 23, 25.  
1844. Is *Corbicula Paranacensis*, Pr.

55. Sph. *Parisiense*, Pr.

*Cycs. transversa*, Lev. Grateloup. Moll. Fr. Cont. 49 1855.

Hab. France, (fossil.)

56. Sph. *partumeium*, Say. Bgt. Sph. 12. 1854.

*Cycl. partumeia*, Say. Ac. N. S. Phil. II. 2, 380. 1822. Fer. Mag. Zool. 1835. Jay, Cat. 3d ed. 16. 1839. Gould, Rept. 73, f. 54. 1841. Dekay, 223, pl. 25, f. 262. 1842. C. B. Ads. Vt. 18. 1842. Mighles. Bost. II. iv. 318. 1843. Linsl. Amer. II. 48, 276. 1845. C. B. Ads. Cat. 30. 1847. Jay. Cat. iv. ed. 32. 1850. Pr. Bost. Proc. iv. 165. 1851. Stimps. N. E. Moll. 16. 1851. Pr. Bost. Proc. iv. 278. 1852. Hartm. Cat. 1853. Bgt. Amen. 1, p. g. 1853. Lew. Bost. Proc. v. 122. 1855. Lew. loc. sup. cit. vi. 2. 1856.

*C. cornea*, Lam. (Var. 2.) Lam. vi. 558, 1818. Lam. (Desh ed. vi.) 268. 1835.

*C. orbicularia*, Barrat. Linsl. Amer. II. 48, p. 276. 1845. Bgt. Amen. 1, p. g. 1853.

*C. mirabilis*, Pr. Bost. Proc. iv. 167. 1851. Bgt. Amen. 1, p. 8. 1853.

*C. cærulea*, Pr. Bost. Proc. iv. 161. 1851. Jay, Cat. iv. ed. 465. 1852. Bgt. Amen. 1, p. 7. 1855.

*Sph. orbicularium*, Barrat. Ads. Rec. Gen. ii. 450. 1858.

*Sph. mirabile*, Pr. Loc. sup. cit. ii. 450. 1858.

*Sph. cæruleum*, Pr. Loc. sup. cit. ii. 450. 1858.

Hab. N. America.

—Cycl. *parva*, Sowb. Trans. Geol. Soc. 2d ser. iv. 345. pl. xxi. f. 7. 1836. Is *Cyrena parva*, Morris.

57. Sph. *patella*, Gould. Ads. Rec. Gen. ii. 450. 1858.

*Cyclas patella*, Gld. Bost. Proc. iii. 292. 1850. Pr. loc. sup. cit. iv. 285. 1852.

Hab. N. America.

—Sph. *pellucidum*, Pr. Ads. Rec. Gen. ii. 450. 1858. Is *Sph. truncatum*, Linsl.

—Cycl. *Perezeii*, Villa. Mss. 1858. Is *Sph. lacustre*, Fer.

58. Sph. *perpusillum*, Gärtn.

*Cyclas perpusilla*, Gärtn. Ann. der Wetter. 316.

Hab. Europe.

—Cycl. *Pfeifferi*, Ziegl. Porro. Malac. 121. 1838. Is *Pisid. amnicum*, Jen.

59. Sph. *pisidioides*, Gray? Ads. Rec. Gen. ii. 450. 1858.

Hab. England. (Not described.)

60. Sph. *pisum*, Math. Bgt. sph. 43. 1854.

*Cyclas pisum*, Math. Cat. Méth. 148, pl. xiv. f. 10, 11. 1842.

*C. subpisum*, d'Orb. Prod. 3, 19. 1852.

Hab. France, (fossil.)

—Cycl. *pisum*, d'Orb. Prod. 2, 322. 1850. Is *Cyrena pisum*, Desh.

—Cycl. *plumbeus*, Villa. Cat. 44. 1841. Is *Sph. corneum*, Scop.

—Sph. *ponderosum*, Pr. Ads. Rec. Gen. ii. 450. 1858. Is *Sph. sulcatum*, Lam.

—Cycl. *prisca*, Eichw. Nat. Hist. Skizze. 207. Is *Pisid. priscum*, Eichw.

61. Sph. *prominulum*, Reüss. Bgt. Sph. 47. 1854.

*Cyclas prominula*, Reüss. Dkr. et Meyer Paleont. 2, 242, pl. iv. f. 14. 1852.

Hab. Germany, (fossil.)

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- Cycl. *proserpina*, d'Orb. Prod. 2, 323. 1850. Is *Cyrena proserpina*, Pr.
62. Sph. *proximum*, Alder? Ads. Rec. Gen. ii. 450. 1858.  
Hab? (Not described.)  
—Cycl. *pulchella*, Hanl. Proc. Spec. 1, 91. 1843. Is *Pisid. casertanum*, Bgt.
63. Sph. *pulchellum*, d'Orb.  
*Cyclas pulchella*, d'Orb. Guer. Mag. Zool. 1835. Voy. Amer. Sept. 568, pl. 83, f. 8–10. 1844.  
*Musculium pulchellum*, d'Orb. Ads. Rec. Gen. ii. 452. 1858.  
*Pisum pulchellum*, d'Orb. Loc. sup. cit. ii. 560. 1858.  
Hab. South America.  
—Cycl. *pulcher*, Sowb. Min. Conch. vi. 51, pl. 527, f. 1. 1829. Is *Cyrena pulchra*, Morris.  
—Cycl. *pusilla*, Turton. Man. 16, pl. 1, f. 7. 1831. Is *Pisid. pusillum*, Jen.
64. Sph. *pygmeum*, C. B. Adams.  
*Cyclas pygmea*, C. B. Adams. Contr. Conch. 44, 1849. Jay, Cat. iv. ed. 465, 1852. Bgt. Amen. 1, p. 9, 53, 1853.  
*Musculium pygmeum*, C. B. Ads. Ads. Rec. Gen. ii. 452, 1858.  
*Pisum pygmeum*, C. B. Ads. Loc. sup. cit. ii. 660, 1858.  
Hab. W. Indies.  
—Cycl. *radiata*, Blainv. 2232. 1828. Is *Galatea radiata*, Lam.
65. Sph. *rhomboideum*, Say. Ads. Rec. Gen. ii. 450. 1858.  
*Cyclas rhomboidea*, Say. Ac. N. S. Phil. II. ii. 380, 1822. Fer. Mag. Zool. 1835. Dekay, 224, pl. 25, f. 263, 1842. C. B. Ads. Vt. 18, 1842. Linsl. Amer. II. 48, 276, 1845. C. B. Ads. Cat. 30, 1847. Jay, Cat. iv. ed. 32, 1850. Stimps. N. C. Moll. 16, 1851. Pr. Bost. Proc. iv. 272, 1852. Pr. An. N. Y. Lyc. vi. 66, pl. 1, f. 4—a, b, 1853. Bgt. Amen. 1, p. 9. 1853.  
*Cyclas cornea*, Lam. var. 3. Lam. v. 558, 1818. Lam. (Desh. ed.) vi. 268, 1835.  
*Cyclas elegans*, Ads. Bost. II. 3, 330, pl. 3, f. 11, 1840. Gould. Rept. 74, f. 55, 1841. Dekay, 224, 1842. C. B. Ads. Vt. 18, 1842. Linsl. Amer. II. 48, 276, 1845. C. B. Ads. Cat. 30, 1847. Jay, Cat. iv. ed. 32, 1850. Pr. Bost. Proc. iv. 165, 1851. Stimps. N. E. Moll. 16, 1851. Bgt. Amen. 1, p. 8. 1853. Lewis Bost. Proc. v. 122, 1855.  
*Sph. elegans*, C. B. Adams. Ads. Rec. Gen. ii. 450, 1858.  
Hab. N. America.  
—Cycl. *rivalis*, Drap. Hist. Moll. 129, pl. x. f. 4, 5. 1805. Is. Sph. *corneum*, Scop.
66. Sph. *rivicola*, Lam. Bgt. Amen. 1, p. 6, 1853.  
*Chama albida*, d'Arg. Conch. 2d pt. pl. 31, p. 368, 374, 1742.  
*Tellina cornea*, (pars.) Schröt. 189, pl. iv. f. 4, 1779.  
*Cyclas cornea*, (pars.) Draps. Tabl. Moll. 105, var. a, 1801.  
*C. rivicola*, Lam. Lam. v. 558, 1818.  
*C. æquata*, Sheph. Mss. 1840.  
*Sph. riviculum*, Leach. Morch. Cat. Conch. etc. fasc. 2, p. 30, 1853.  
*Cycl. sabulicola*, Kryn. Mss. (Bgt. Sph. 13, 1854.)  
Hab. Europe.
67. Sph. *rosaceum*, Pr. Ads. Rec. Gen. ii. 450. 1858.  
*Cyclas rosacea*, Pr. Bost. Proc. iv. 155, 1851. Loc. sup. cit. iv. 277. 1852.  
Hab. N. America.  
—Cycl. *Rouyana*, d'Orb. Prod. 2, 381. 1850. Is *Cyrena Rouyana*, Bgt. 1860.]

68. *Sph. rugosum*, Dkr.  
*Cyclas rugosa*, Dkr. Dkr. & Meyer, Paleont. 1, 38, pl. 6, f. 15, 16, a-b, 1846.  
 Hab. Germany, (fossil.)
69. *Sph. Ryckholtii*, Normd. Bgt. Amen. 1, p. 6. 1853. Normd. Cycl. 3. 1854.  
*Cyclas Ryckholtii*, Normd. Cycl. 7, f. 5, 6, 1844.  
*Sph. strictum*, Normd. Cycl. 3, 1854.  
 Hab. France.
70. *Sph. Rylliense*, Boissy.  
*Cyclas Rylliensis*, Boissy. Bull. Soc. Géol. Fr. 2d ser. iv. 178, 1846.  
 Mem. Soc. Géol. Fr. 2d ser. 3, 270, pl. v. f. 5, a-c, 1848.  
*Pisid. Rylliense*, Bgt. Sph. 52, 1854.  
 Hab. France, (fossil.)  
 —Cycl. *sabulicola*, Kryn. Mss. (Bgt. Lph. 13. 1854. Is *Sph. rivicola*, Lam.  
 —Cycl. *Sarratogea*, Lam. Lam. v. 560. 1818. Is *Sph. sulcatum*, Lam.
71. *Sph. Scaldianum*, Normd. Cycl. 1. 1854.  
*Cyclas Scaldiana*, Normd. Cycl. 5, f. 1, 2, 1844.  
*Sph. corneum*, Scop. Bgt. Amen. 1, p. 6, 1854.  
*S. citrinum*, Normd. Cycl. 1, 1854.  
 Hab. France.  
 —Cycl. *Sebetia*, DaCosta. Cat. Syst. Tert. Sicil. pl. 2, f. 6. 1829. Is *Bornia corbuloides*, Phil.
72. *Sph. securis*, Pr. Ads. Rec. Gen. ii. 450. 1858.  
*Cyclas securis*, Pr. Bost. Proc. iv. 160, 1851. Stimp. N. E. Moll. 16, 1851. An. N. Y. Lyc. v. 218, pl. vi., 1852. Bost. Proc. iv. 276, 1852. Jay, Cat. iv. ed. 466, 1852. Hartman, Cat. 1853. Bgt. Amen. 1, p. 9, 1853. Lewis, Bost. Proc. v. 122, 1855.  
*C. crocea*, Lewis. Loc. sup. cit. v. 25, 1854; vi. 2, 1856.  
 Hab. N. America.
73. *Sph. seminulum*, Reuss. Bgt. Sph. 47. 1854.  
*Cycl. seminulla*, Reuss. Dkr. & Meyer Paleont. 2, 42, pl. iv. f. 15, 1852.  
 Hab. Europe (fossil.)  
 —Cycl. *semistriata*, d'Orb. Prod. 3, 19. 1852. Is *Cyrena semistriata*, Desh.  
 —*Sph. simile*, Say. Ads. Rec. Gen. ii. 450. 1818. Is *Sph. sulcatum*, Lam.  
 —*Sph. simplex*, Pr. Ads. Rec. Gen. ii. 450. 1858. Is *Sph. acuminatum*, Pr.  
 —Cycl. *sirena*, d'Orb. Prod. 2, 323. 1850. Is *Cyrena sirena*, Pr.  
 —Cycl. *solida*, DeKay. 220, pl. 25, f. 265. 1842. Is *Sph. sulcatum*, Lam.
74. *Sph. solidum*, Normd. Bgt. Amen. 1, p. 6, 1853. Normd. Cycl. 2, 1854.  
*Cycl. solida*, Normd. Cycl. 6, f. 3-4. 1844.  
 Hab. France.
75. *Sph. solidulum*, Pr.  
*Cycl. solidula*, Pr. Bost. Proc. iv. 158, 1851. Loc. sup. cit. iv. 282, 1852. Jay, Cat. iv. ed. 466, 1852. Bgt. Amen. 1, p. 9, 1853. Lewis, Bost. Proc. v. 122, 1855.  
*C. distorta*, Pr. loc. sup. cit. iv. 158, 1851. Loc. sup. cit. iv. 285, 1852. Bgt. Amen. 1, p. 7, 1853. Lewis, Bost. Proc. v. 122, 1855.  
*Sph. distortum*, Pr. Ads. Rec. Gen. ii. 450. 1858.  
 Hab. N. America.

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76. *Sph. sphaericum*, Anthony. Ads. Rec. gen. ii. 450, 1858.  
*Cycl. sphaerica*, Anth. Pr. Bost. Proc. iv. 275. 1852.  
 Hab. N. America.  
 —*Cycl. stagnosticola*, Leach. Mss. Brit. Mus. 1840. Is *Sph. corneum*, Scop.
77. *Sph. stamineum*, Conrad. Ads. Rec. Gen. ii. 450. 1858.  
*Cycl. staminea*, Conrad. Amer. Il. xxv. 342, pl. 1, f. 5, 1834. Fer. Mag. Zool. 1833. Dekay, 224, 1842. Jay, Cat. iv. ed. 32, 1850. Pr. Bost. Proc. iv. 281, 1852. Bgt. Amen. 1, p. 9, 1853.  
 Hab. N. America.  
 —*Sph. Steenbuchii*, Möller. Ads. Rec. Gen. ii. 450, 1858. Is *Pisid. Steenbuchii*, Morch.
78. *Sph. Steenii*, Schmidt. Ads. Rec. Gen. ii. 450. 1858.  
*Cycl. Steenii*, Schmidt. Zeit. Malac. 118. 1850.  
 Hab. Germany.  
 —*Cycl. striatella*, Fer. Cat. 20. 1837. Collect. Mus. Paris. Is *Sph. maculatum*, Morelet.
79. *Sph. striatinum*, Lam.  
*Cycl. striatina*, Lam. Lam. v. 560, 1818. Lam. (Desh. edit.) vi. 271, 1835. Delessert pl. vii. f. 4, 1841. Bgt. Amen. 1, p. 9, 1853. Pr. notes on Cycl. 1857.  
*C. edentula*, Say N. Harm. Dissem. 2, 1829. Fer. Mag. Zool. 1835. N. Harm. Dissem. (reprint) 10, 1840. DeKay 225, 1842. Bgt. Amen. 1, p. 8, 1853.  
*C. modesta*, Pr. Bost. Proc. iv. 159, 1851. Loc. sup. cit. iv. 284, 1852. Bgt. Amen. 1, p. 8, 1853. Lewis, Bost. Proc. vi. 2, 1856.  
*Sph. modestum*, Pr. Ads. Rec. Gen. ii. 450. 1858.  
*Musculium edentulum*, Say. Loc. sup. cit. ii. 451, 1858.  
*Pisum edentulum*, Say. Loc. sup. cit. ii. 560, 1858.  
 —*Sph. strictum*, Normd. Cycl. 3. 1854. Is *Sph. Ryckholtii*, Normd.  
 —*Cycl. subdeperdita*, d'Orb. Prod. 2, 305. 1850. Is *Cyrena deperdita*, Desh.  
 —*Cycl. subdepressa*, d'Orb. Prod. 2, 381. 1850. Is *Cyrena compressa*, Desh.
80. *Sph. subellipticum*, Meek & Hayden.  
*Cycl. subelliptica*, M. & H. Ac. N. S. Phil. Proc. viii. 115. 1856.  
 Hab. N. Amer. (fossil.)  
 —*Cycl. sublaevigata*, d'Orb. Prod. 2, 304. 1850. Is *Pisid. laevigatum*, Bgt.  
 —*Cycl. sublaevis*, Gldf. Petr. Germ. 2, 232, pl. 147, f. 7, a-b. 1834-40. Is *Cyrena sublaevis*, Römer.  
 —*Cycl. suborbicularis*, d'Orb. Prod. 2, 304. 1850. Is *Corbicula orbicularis*, Pr.  
 —*Cycl. subpisum*, d'Orb. Prod. 3, 19. 1852. Is *Sph. pisum*, Math.  
 —*Cycl. subquadrata*, Sowb. Geol. Trans. 2d ser. iv. 177, 345, pl. xxi. f. 8. 1836. Is *Cyrena subquadrata*, Morris.
81. *Sph. subtransversum*, Pr. Proc. Zool. xxviii. 1860.  
 Hab. Mexico.
82. *Sph. subtrigonum*, Dkr.  
*Cycl. subtrigona*, Dkr. Wäld. 168, 1834.  
 Hab. Germ. (fossil.)
83. *Sph. sulcatum*, Lam.  
*Cycl. sulcata*, Lam. Lam. v. 560, 1818. Lam. (Desh. ed.) vi. 271, 1835. Fer. Mag. Zool. 1835. Fer. Cat. 20, 1837. Delessert, pl. vii. f. 3, 1841. Jay, Cat. iv. ed. 32, 1850. Stimp. N. E. Moll. 16, 1851. Bgt. Amen. i. p. 9, 1853. Pr. Notes Cycl. 1857.

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- Cycl. Saratogea*, Lam. Lam. v. 560, 1818. Lam. (Desh. ed.) vi. 271, 1835. Fer. Mag. Zool. 1835. Delessert, pl. 7, f. 9, 1841. Bgt. Amen. i. p. 9, 1853.
- Cycl. similis*, Say. Rafin. in Bory. St. Vt. An. Gen. Sci. Phy. v. 319, 1820. Fer. Mag. Zool. 1835. Fer. Cat. 20, 1837. Jay. Cat. 3, ed. 16, 1839. Gould. Rept. 72, f. 53, 1841. DeKay, 222, pl. 25, f. 264, 1842. Ads. Vt. 18, 1842. Linsl. Amer. II. 48, 276, 1845. Ads. Cat. 30, 1847. Jay. Cat. iv. ed. 32, 1850. Pr. Bost. Proc. iv. 165, 1851. Hartman, Cat. 1853. Bgt. Amen. i. p. 9, 1853. Lewis, Bost. Proc. v. 122, 1855. Lewis, loc. sup. cit. vi. 2, 1856.
- Cycl. lasmampsis*, Rafin. Bory, St. Vt. An. Gen. Sci. Phy. v. 319, pl. 82, f. 19, 20, 1820. Fer. Mag. Zool. 1835. Bgt. Amen. i. p. 8, 1853.
- Cycl. gigantea*, Pr. Bost. Proc. iv. 157, 1851. Loc. sup. cit. iv. 282, 1852. Bgt. Amen. i. p. 8, 1853.
- Cycl. ponderosa*, Pr. Bost. Proc. iv. 157, 1851. Loc. sup. cit. iv. 282, 1852. Bgt. Amen. i. p. 9, 1853.
- Cycl. striatina*, Lam. Fr. Mag. Zool. 1835.
- Sph. giganteum*, Pr. Ads. Rec. Gen. ii. 450, 1858.
- Sph. ponderosum*, Pr. Loc. sup. cit. ii. 450, 1858.
- Hab. N. Amer.
- Cycl. sulculosa*, Charp. Mss. 1851. Is *Sph. fabale*, Pr.
- Cycl. tellinella*, d'Orb. Prod. 2, 304. 1850. Is *Cyrena tellinella*, Fer.
84. *Sph. tenue*, Pr. Ads. Rec. Gen. ii. 450. 1858.
- Cycl. tenuis*, Pr. Bost. Proc. iv. 161, 1861. Loc. sup. cit. iv. 825, 1852.
- Hab. N. Amer.
85. *Sph. tenuistriatum*, Pr. Bgt. Sph. 12. 1854.
- Cycl. tenuistriata*, Pr. Bost. Proc. iv. 156, 1851. Loc. sup. cit. iv. 272, 1852. Bgt. Amen. i. p. 9, 1853.
- Cycl. cornea*, Drap. C. B. Adams, Cat. 29. 1847.
- Hab. N. Amer.
86. *Sph. Terverianum*, Dup. Bgt. Amen. i. p. 6, 1853. Bgt. Sph. 19, pl. 2, f. 11, 15, 1854.
- Cycl. Terveriana*, Dup. Cat. Extram. Gall. Tert. Vt. 87, 1849.
- Hab. France.
87. *Sph. transversum*, Say. Ads. Rec. Gen. ii. 450. 1858.
- Cycl. transversa*, Say. New Harm. Diss. ii. 356, 1829. Fer. Mag. Zool. 1835. New Harm. Diss. Rept. 10, 1840. DeKay, 224, 1842. Jay. Cat. iv. ed. 466, 1852. Pr. Bost. Proc. iv. 274, 1852. Bgt. Amen. i. p. 9, 1853. Lewis, Bost. Proc. v. 122, 1855. Lewis, loc. sup. cit. vi. 2, 1856.
- Cycl. detruncata*, Pr. Loc. sup. cit. iv. 155, 1851, iv. 273, 1852. Bgt. Amen. i. p. 8, 1858.
- Cycl. constricta*, Anthony. Pr. Bost. Proc. iv. 274. 1852.
- Sph. detruncatum*, Pr. Ads. Rec. Gen. ii. 450. 1858.
- Sph. constrictum*, Anth. Loc. sup. cit. ii. 450. 1858.
- Hab. N. America.
- Cycl. transversa*, Lev. Grateloup, Moll. Fr. Cont. 49. 1855. Is *Sph. Parisiense*, Pr.
88. *Sph. triangulare*, Say.
- Cyclas triangularis*, Say. New Harm. Dissem. 2. 356, 1829. Fer. Mag. Zool. 1835. New Harm. Dissem. (rept.) 10, 1860. Bgt. Amen. i. p. 9, 1853.
- Hab. N. America.

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- Cycl. triangularis*, Dub. Fos. Wohln. 59, pl. vi. f. 20, 21, 1831.  
Is *Ericina triangularis*, d'Orb.
- Cycl. trigona*, Gldf. Petr. Germ. 2, 233, pl. 147, f. 11, a-b. 1834-40  
Is *Cyrena Rœmeri*, Dkr.
- Cycl. trigona*, d'Orb. Prod. 2, 304. 1850. Is *Cyrena trigona*, Desh.
- 89. *Sph. truncatum*, Linsley. Ads. Rec. Gen. ii. 451. 1858.  
*Cyclas calyculata*, Drap. C. B. Ads. Amer. II. xl. 277, 1841. Ads.  
Vermt. 18, 1842. Ads. Cat. 29, 1847.  
*Cyclas truncata*, Linsl. Gould. Amer. II. n. ser. vi. 234, f. 3, 1848.  
Pr. Bost. Proc. iv. 165, 1751. Jay, Cat. iv. ed. 466, 1852. Bgt.  
Amen. i. p. 9, 1853.  
*Cyclas pellucida*, Pr. Stimps. N. E. Moll. 16, 1851. Jay, Cat. iv. ed.  
465, 1852. Bost. Proc. iv. 277, 1852. Bgt. Amen. i. p. 9, 1853.  
*Sph. pellucidum*, Pr. Ads. Rec. Gen. ii. 450. 1858.  
Hab. N. America.  
—*Cycl. tuberculata*, Klees. Tubing 45. 1818. Is *Sph. lacustre*, Fer.  
—*Cycl. tumida*, Ziegl. Villa Cat. 44. 1841. Is *Sph. corneum*, Scop.
- 90. *Sph. unguiforme*, Boissy. Bgt. Sph. 42. 1854.  
*Cycl. unguiformis*, Boissy. Bull. Soc. Géol. Tr. 2d ser. iv. 178, 1846.  
Mem. Soc. Géol. Tr. 2d ser. 3, 269, pl. v. f. 2, 1848.  
Hab. France, (fossil.)  
—*Cycl. Ustuertensis*, Eichw. Faun. Casp. 263. 1841. Is *Arthemis*  
*Ustuertensis*, Eichw.  
—*Cycl. Vapincana*, d'Orb. Prod. 2. 381. 1850. Is *Cyrena Vapincana*, Bgt.
- 91. *Sph. Veatleyi*, C. B. Adams.  
*Cycl. Veatleyi*, C. B. Ads. Contrib. Conch. 44. 1869. Jay, Cat. iv. ed.  
32. 1850. Bgt. Amen. 1, p. g. 1853.  
*Pisid. Veatleyi*, Petit. II Conch. 2, 421. 1851. Bgt. Amen. 1, p. 53.  
1853.  
*Musculium Veatleyi*, C. B. Ads. Ads. Rec. Gen. ii. 452. 1858.  
*Pisum Veatleyi*, C. B. Ads. Ads. loc. sup. cit. ii. 560. 1858.  
Hab. Jamaica.  
—*Cycl. Venezuelensis*, Pr. In Collect. Mus. Leyden, 1857. Is *Sph.*  
*maculatum*, Morelet.
- 92. *Sph. Verneuili*, Boissy. Bgt. Sph. 42. 1854.  
*Cycl. lenticularis*, Boissy. Bull. Soc. Geol. Fr. 2d ser. iv. 178. 1846.  
*Cycl. Verneuili*, Boissy. Mem. Soc. Geol. Fr. 2d ser. 4, 569, pl. v. f. 3.  
1848.  
Hab. France, (fossil.)  
—*Cycl. violacea*, Lam. Ann. Mus. vii. 421. 1806. Is *Battissa violacea*, Adams.  
—*Cycl. vitrea*, Risso. Risso, iv. 338. 1826. Is *Pisid. casertanum*,  
Bgt.  
—*Cycl. Zeylanica*, Lam. Ann. Mus. vii. 420. 1806. Is *Cyrena Zeylanica*, Lam.
- 93. *Sph. zonatum*, Pr. MSS. 1859, in Collect. Cumming.  
Hab. N. Zealand.

On motion, an election was held, and Mr. Wm. C. Henszey was chosen Treasurer in place of George W. Carpenter deceased.